

## GENDER INEQUALITY IN PATENT LITIGATION\*

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*This Article presents an empirical study of gender diversity—or, more accurately, the lack thereof—among the lawyers who handle patent cases in the federal courts, focusing on appellate litigation at the Federal Circuit and the Supreme Court. Drawing on two original datasets, the Article finds that, over the past decade, 87.4% of oral arguments in patent appeals at the Federal Circuit have been presented by men. The numbers are similar at the Supreme Court: over the past thirty years, more than 90% of arguments in patent cases have been delivered by male attorneys.*

*The typical explanation for these sorts of gender gaps is that men are disproportionality represented in the science and technology fields that underlie patent practice. But a closer look at the numbers shows that gender parity exists in specific areas of patent litigation. Until a recent retirement, half of the Federal Circuit's twelve active judges were women, and the women on the court tend to have more pre-appointment experience in patent law than their male counterparts. In addition, the data collected for this study demonstrate that, when the government becomes involved in patent litigation (usually because a case involves the Patent and Trademark Office), women present oral argument at the Federal Circuit 48.5% of the time—more than five times as frequently as the rate for private-sector litigants.*

*The story this Article tells—of women being largely absent from high-level patent litigation—is actually a story about gender inequality among the lawyers hired by large corporations, particularly the Federal Circuit's most frequent litigants, including Apple, Amazon, Google, and Samsung, all of which have*

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*been represented by women in less than 15% of their arguments over the past decade.*

*Figuring out why women rarely litigate patent appeals for private-sector clients is challenging, but the disparity between law firms and the government parallels inequalities in law practice more generally. To that end, this Article suggests both small steps that would increase gender balance among the lawyers arguing patent cases as well as broader structural reforms that would improve diversity across the bar.*

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## INTRODUCTION

On July 19, 2021, the Senate confirmed Tiffany Cunningham to the U.S. Court of Appeals for the Federal Circuit, which hears all patent appeals nationwide.<sup>1</sup> Judge Cunningham’s confirmation made history because she is the

1. Perry Cooper, *Cunningham Is Confirmed As First Black Federal Circuit Judge*, BLOOMBERG L. (July 19, 2021, 7:19 PM), [https://www.bloomberglaw.com/bloomberglawnews/ip-law/X7L2LD4O000000?bna\\_news\\_filter=ip-law#jcite](https://www.bloomberglaw.com/bloomberglawnews/ip-law/X7L2LD4O000000?bna_news_filter=ip-law#jcite) [https://perma.cc/6JBT-UMDF (staff-uploaded, dark archive)].

first Black judge to serve on the court.<sup>2</sup> And her confirmation was noteworthy for another reason: the Federal Circuit, at that time, had an equal number of men and women on its bench, making it one of only two federal appellate courts to reach that milestone.<sup>3</sup>

The bar that litigates patent cases before the Federal Circuit, however, is far less diverse. As the empirical study presented by this Article shows, over the past decade, the Federal Circuit has heard over 6,500 individual oral arguments in patent cases. Women presented only 825 of them, or 12.6%.<sup>4</sup> The usual explanation for gender gaps like that is that practicing patent law often requires a degree in certain technical fields—engineering, chemistry, computer science, or microbiology, for example<sup>5</sup>—in which women have historically been underrepresented.<sup>6</sup> But the notion that careers in patent law are only for those with backgrounds in the hard sciences is increasingly wrong.<sup>7</sup> Patent cases today

2. Dani Kass, *'History Maker' Cunningham Draws High Praise from IP Attys*, LAW360 (July 19, 2021, 9:37 PM), <https://www.law360.com/articles/1404509/-history-maker-cunningham-draws-high-praise-from-ip-attys> [<https://perma.cc/6B4S-XTTU> (staff-uploaded, dark archive)].

3. The Eleventh Circuit is the other court of appeals with an equal number of men and women judges. See *infra* Figure 8. After Judge Cunningham's confirmation in the summer of 2021, Judge Kathleen O'Malley retired and was replaced by Judge Leonard Stark. See *Swearing-in of the Honorable Leonard P. Stark*, U.S. CT. APPEALS FOR FED. CIR. (Mar. 17, 2022, 3:37 PM), <https://cafc.uscourts.gov/swearing-in-of-the-honorable-leonard-p-stark> [<https://perma.cc/2WMG-CD6C>]. As this Article goes to press, the Federal Circuit's bench is comprised of five women and seven men, as it was for much of the time period covered by this Article's empirical study. See *infra* Figure 7.

4. See *infra* Figure 9. Though our study uses the binary terms "men" and "women" and "male" and "female," we are acutely aware of the shortcomings of binary conceptions of gender and how that binary incorporates assumptions about sexuality and sexual identity. See Dean Spade, *Intersectional Resistance and Law Reform*, 38 SIGNS: J. WOMEN CULTURE & SOC'Y 1, 2 (2013); see also Jessica A. Clarke, *They, Them, and Theirs*, 132 HARV. L. REV. 894, 904 (2019) (assessing "how nonbinary gender changes the discussion in each particular context of binary gender regulation" and arguing that "rather than opening Pandora's box, nonbinary gender rights may have unforeseen benefits").

5. See *Careers in Science: Patent Law*, YALE SCI. MAG. (Mar. 14, 2012), <https://www.yalescientific.org/2012/03/careers-in-science-patent-law> [<https://perma.cc/QNZ2-BTQ4>] ("Patent law is an open field that requires the relevant technical training, much like needing the appropriate physics background for mechanical devices and biochemistry for pharmaceuticals."). On the requirements for admission to practice before the Patent and Trademark Office, see OFF. OF ENROLLMENT & DISCIPLINE, U.S. PAT. & TRADEMARK OFF., GENERAL REQUIREMENTS BULLETIN FOR ADMISSION TO THE EXAMINATION FOR REGISTRATION TO PRACTICE IN PATENT CASES BEFORE THE U.S. PATENT & TRADEMARK OFFICE 4–8 (2021), [https://www.uspto.gov/sites/default/files/documents/OED\\_GRB.pdf](https://www.uspto.gov/sites/default/files/documents/OED_GRB.pdf) [<https://perma.cc/652F-84DV>].

6. See CATHERINE HILL, CHRISTIANNE CORBETT & ANDRESSE ST. ROSE, *WHY SO FEW? WOMEN IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS* 10 (2010), <https://www.aauw.org/app/uploads/2020/03/why-so-few-research.pdf> [<https://perma.cc/V38A-JA4N>].

7. See generally Lee Petherbridge & David L. Schwartz, *The End of an Epithet? An Exploration of the Use of Legal Scholarship in Intellectual Property Decisions*, 50 HOUS. L. REV. 523, 552–53 (2012) ("Those who teach patent law are aware that to this day there exist the remnants of a culture that preferred attorneys with technical backgrounds to other attorneys . . . . Today that view seems archaic . . ."). Some members of Congress have begun to question the "nonsensical" rules the Patent Office imposes to limit access to the patent bar. Andrew Karpan, *Senators Tell Iancu Patent Bar Needs*

are handled by the most prominent generalist litigators in the country, including well-known appellate advocates such as Paul Clement, Carter Phillips, and Seth Waxman.<sup>8</sup> Those lawyers have no special background in patent law or technology, but the world's largest companies trust them to handle their most high-stakes patent disputes. Yet, even though the practice of patent law is no longer the exclusive domain of lawyers with scientific backgrounds, the stereotype of the patent bar as overwhelmingly male remains accurate.<sup>9</sup>

Still, as this Article also shows, there is at least one patent litigation role in which women appear just as frequently as men: representing the government at the Federal Circuit. Of the 616 arguments presented to the Federal Circuit in patent cases on the government's behalf since 2010, 298 (48.4%) of them were presented by women.<sup>10</sup> This phenomenon—women disproportionately appearing on behalf of the government in a field otherwise dominated by men—is not unique to Federal Circuit patent cases. For instance, as this study's data show, Supreme Court arguments in all types of cases (not just patent cases) are overwhelmingly presented by male attorneys: 83.4% from 2010 through 2019.<sup>11</sup> The comparatively few women who argue at the Court disproportionately do so on behalf of the federal government. Over the past decade, 48.8% of the oral arguments presented by women at the Supreme Court (143 of 293) were by attorneys from the Office of the Solicitor General.<sup>12</sup>

By documenting the absence of women in patent litigation, particularly representing private litigants, this Article provides original evidence of the persistent underrepresentation of women in high-stakes commercial litigation more generally. It also adds to recent literature documenting how the modern, “winner take all” corporate model favors what has been called a “new boys club”—an insular, self-serving network that thrives on “masculinity contests.”<sup>13</sup>

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*More Women, LAW360* (Dec. 15, 2020, 9:43 PM), <https://www.law360.com/articles/1337950/attachments/0> [<https://perma.cc/M4M4-E9Z7> (staff-uploaded, dark archive)]. For a scholarly critique of the requirements imposed for admission to the patent bar, see William Hubbard, *Razing the Patent Bar*, 59 ARIZ. L. REV. 383 (2017).

8. Paul R. Gugliuzza, *The Supreme Court Bar at the Bar of Patents*, 95 NOTRE DAME L. REV. 1233, 1236 (2020) [hereinafter Gugliuzza, *Supreme Court Bar*]; Paul R. Gugliuzza, *Elite Patent Law*, 104 IOWA L. REV. 2481, 2482 (2019) [hereinafter Gugliuzza, *Elite Patent Law*].

9. As Judge Cunningham described her time clerking on the Federal Circuit in 2001 and 2002: “One thing that struck her was the ‘homogenous’ nature of the court’s judges: all white with only two women.” Andrew Kragie, *Perkins Coie IP Atty Confirmed As Fed. Circ.’s 1st Black Judge*, LAW360 (July 19, 2021, 7:37 PM), <https://www.law360.com/articles/1403597/perkins-coie-ip-atty-confirmed-as-fed-circ-s-1st-black-judge> [<https://perma.cc/3BMZ-CM7Q> (staff-uploaded, dark archive)].

10. See *infra* Figure 13.

11. See *infra* Figure 1.

12. See *infra* Section III.A.

13. See, e.g., Naomi Cahn, June Carbone & Nancy Levit, *Discrimination by Design*, 51 ARIZ. ST. L.J. 1, 4–6 (2019) [hereinafter Cahn et al., *Discrimination by Design*]; see also June Carbone, Naomi Cahn & Nancy Levit, *Women, Rule-Breaking, and the Triple Bind*, 87 GEO. WASH. L. REV. 1105, 1109 (2019) [hereinafter Carbone et al., *Rule-Breaking*] (describing the emergence of a “young boys club”: “alpha

The appellate patent bar is, arguably, such a club. Though nearly 2,800 lawyers have presented at least one argument in a Federal Circuit patent case over the past decade, a mere ninety lawyers account for almost one-quarter of all arguments. And of the sixty-four private-sector lawyers in the top ninety, fifty-nine—or 92%—are men.<sup>14</sup> By spotlighting the significant gender imbalance at the highest levels of patent law practice, this Article underscores the importance of remaking the upper echelons of the legal profession to be more representative of law school graduates and the population of lawyers at large.<sup>15</sup>

This Article also adds a novel empirical element to the scholarly literature on patent law and gender. Previously, scholars have offered feminist critiques of patent law doctrines<sup>16</sup> and eligibility requirements for the patent bar,<sup>17</sup> analyzed how patent law has been applied to technologies with a unique salience for women,<sup>18</sup> and interrogated the theoretical foundations of intellectual

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males” selected by higher-level management to “flout the laws that stand in the way of . . . otherwise profitable business models”).

14. See *infra* Section III.B.4.

15. Because of the limited information available we were, unfortunately, not able to reliably code for attorneys’ race or ethnicity. We emphasize, however, that lawyers of color, and particularly lawyers who are women of color, are vastly underrepresented in senior positions across all practice areas, including intellectual property law. See Ian Lopez, *Black IP Lawyers Who’ve Made It Look To Grow Ranks Beyond 1.7%*, BLOOMBERG L. (Aug. 6, 2020, 5:16 AM), <https://news.bloomberglaw.com/ip-law/black-ip-lawyers-whove-made-it-look-to-grow-ranks-beyond-1-7> [https://perma.cc/KA54-X7VJ] (staff-uploaded, dark archive)] (noting that only 5% of attorneys in the United States are Black and less than 2% of intellectual property lawyers are Black). Thus, we hope that the gender inequality we document adds to the conversation on the intersectional identities of professionals and structural racism in law practice. For examples of commentary that explore the value of diversity in law practice along numerous dimensions, see David B. Wilkins & G. Mitu Gulati, *Why Are There So Few Black Lawyers in Corporate Law Firms? An Institutional Analysis*, 84 CALIF. L. REV. 493, 498 (1996); ELIZABETH CHAMBLISS, MILES TO GO: PROGRESS OF MINORITIES IN THE LEGAL PROFESSION 5–7 (2004); Deborah L. Rhode, *From Platitudes to Priorities: Diversity and Gender Equity in Law Firms*, 24 GEO. J. LEGAL ETHICS 1041, 1042–46 (2011) [hereinafter Rhode, *From Platitudes*]; Tomiko Brown-Nagin, *Identity Matters: The Case of Judge Constance Baker Motley*, 117 COLUM. L. REV. 1691, 1693 (2017).

16. See, e.g., Malla Pollack, *Towards a Feminist Theory of the Public Domain, or Rejecting the Gendered Scope of the United States Copyrightable and Patentable Subject Matter*, 12 WM. & MARY J. WOMEN & L. 603, 605 (2006); Dan L. Burk, *Do Patents Have Gender?*, 19 AM. U. J. GENDER, SOC. POL’Y & L. 881, 882–84 (2011) [hereinafter Burk, *Do Patents Have Gender?*]. For feminist critiques in other areas of intellectual property law, see Ann Bartow, *Likelihood of Confusion*, 41 SAN DIEGO L. REV. 721, 816–17 (2004); Carys J. Craig, *Reconstructing the Author-Self: Some Feminist Lessons for Copyright Law*, 15 AM. U. J. GENDER, SOC. POL’Y & L. 207, 207 (2007).

17. See, e.g., Mary T. Hannon, *The Patent Bar Gender Gap: Relaxing the Eligibility Requirements To Foster Inclusion and Innovation in the U.S. Patent System*, 10 IP THEORY 1, 2 (2020); see also Christopher M. Turoski, *Promoting Patent Practitioner Diversity: Expanding Non-JD Pathways and Removing Barriers*, 24 VAND. J. ENT. & TECH. L. 57, 58, 104 (2021) (arguing that the U.S. Patent and Trademark Office could increase racial and gender diversity among patent practitioners by both (1) “expanding the pipeline of students who aspire to become patent practitioners” through communication efforts, financial support, and educational programs and (2) by “removing systemic barriers . . . students [from underrepresented groups] face” in seeking admission to the patent bar).

18. See, e.g., Eileen M. Kane, *Molecules and Conflict: Cancer, Patents, and Women’s Health*, 15 AM. U. J. GENDER, SOC. POL’Y & L. 305, 307 (2007) (discussing patents for breast cancer detection and

property law more generally from a feminist perspective.<sup>19</sup> The lack of women inventors named on issued patents also has been documented; a recent study by the U.S. Patent and Trademark Office (“PTO”) found that only 12% of named inventors were women.<sup>20</sup> The report noted that the gender gap among inventors has persisted despite increasing participation of women in science and engineering.<sup>21</sup>

This Article, by focusing on gender representation in the practice of patent law, makes clear how much work remains to be done to create an inclusive patent bar and legal profession more broadly. On the patent side, we highlight reforms that law firms, their clients, and the courts have begun to undertake to increase gender parity.<sup>22</sup> For example, many large corporations now insist that their law firms staff matters with a diverse team of lawyers.<sup>23</sup> Nevertheless, as our data indicate, it is usually male senior partners who stand up in court when it matters most. Courts and judges, however, can provide incentives for inclusion. Several federal judges, as well as the Patent Trial and Appeal Board

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treatment); Kara W. Swanson, *Getting a Grip on the Corset: Gender, Sexuality and Patent Law*, 23 YALE J.L. & FEMINISM 57, 60 (2011) (describing the corset—the technology at the center of the landmark Supreme Court case on what constitutes an invalidating “public use” of an invention in *Egbert v. Lippmann*, 104 U.S. 333 (1881)); Laura A. Foster, *Situating Feminism, Patent Law, and the Public Domain*, 20 COLUM. J. GENDER & L. 262, 262 (2011) (detailing patents for various forms of indigenous knowledge).

19. See, e.g., Deborah Halbert, *Feminist Interpretations of Intellectual Property*, 14 AM. U. J. GENDER, SOC. POL’Y & L. 431, 433 (2006); see also Kara W. Swanson, *Intellectual Property and Gender: Reflections on Accomplishments and Methodology*, 24 AM. U. J. GENDER, SOC. POL’Y & L. 175, 195–98 (2015) [hereinafter Swanson, *Intellectual Property and Gender*] (providing an extensive bibliography of scholarship on gender and patent law).

20. OFF. OF THE CHIEF ECONOMIST, U.S. PAT. & TRADEMARK OFF., PROGRESS AND POTENTIAL: A PROFILE OF WOMEN INVENTORS ON U.S. PATENTS 4 (Feb. 2019) [hereinafter OFF. OF THE CHIEF ECONOMIST, U.S. PAT. & TRADEMARK OFF., PROGRESS AND POTENTIAL], <https://www.uspto.gov/sites/default/files/documents/Progress-and-Potential-2019.pdf> [<https://perma.cc/4QU8-RDY7>].

21. *Id.* at 3; accord Orly Lobel, *Exit, Voice, and Innovation: How Human Capital Policy Impacts Equality (& How Inequality Hurts Growth)*, 57 HOUS. L. REV. 781, 794 (2020) (“Comparing the women inventor rate with the percentage of women in science and engineering occupations, there is a wide gap. In nearly all fields, women participate at a much higher rate than they patent technology.”); see also CRISTOBAL DE BREY, LAUREN MUSU, JOEL MCFARLAND, SIDNEY WILKINSON-FLICKER, MELISSA DILIBERTI, ANLAN ZHANG, CLAIRE BRANSTETTER & XIAOLEI WANG, STATUS AND TRENDS IN THE EDUCATION OF RACIAL AND ETHNIC GROUPS 2018 156 (2019), <https://nces.ed.gov/pubs2019/2019038.pdf> [<https://perma.cc/6VM9-3ANP>] (reporting that, in 2015 and 2016, 36% of bachelor’s degrees in STEM fields were awarded to women, compared to 58% of bachelor’s degrees overall).

22. See *infra* Sections IV.A–C.

23. See Ruiqi Chen, *Companies Want Lawyer Diversity, but Firms Lack Set Standard*, BLOOMBERG L., <https://news.bloomberglaw.com/business-and-practice/companies-want-lawyer-diversity-but-no-set-standard-for-firms> [<https://perma.cc/WSV4-XZ9T> (staff-uploaded, dark archive)] (last updated Feb. 12, 2021, 1:00 PM).

at the PTO (an increasingly important forum for patent litigation<sup>24</sup>), have made it a regular practice to offer parties additional argument time if they choose a lawyer with little experience to take the lead.<sup>25</sup> Whether opportunities for *inexperienced* lawyers will translate to additional argument time for *women* remains to be seen. To that end, courts and judges could offer—and a few already have offered<sup>26</sup>—additional argument time to parties represented by women lawyers and lawyers of color.

Yet an “add diversity and stir” approach has significant limits,<sup>27</sup> particularly when it comes to changing behavior in places, such as at leading law firms, where sexist and racist norms are, consciously or not, deeply embedded.<sup>28</sup> Perhaps the data reported in this Article will persuade some privileged and powerful lawyers to relinquish some argument opportunities they disproportionately enjoy in the current system. But without fundamental changes to law firm governance and lawyer compensation—as well as deeper changes in the culture of corporate workplaces and public and private support for dependent care—the appellate patent bar may continue to look like it does today: a domain almost exclusively populated by men.<sup>29</sup>

The remainder of this Article proceeds as follows. Part I provides historical background on women’s participation in the patent system and discusses the role of gender in patent doctrine and the practice of patent law. Part II describes the methodology of the Article’s empirical study. Part III presents the study’s results in detail and discusses its implications. Finally, Part IV highlights strategies for making the patent bar more diverse and the practice of patent law more inclusive before discussing some limitations of those strategies and our study.

## I. THE GENDER OF PATENT LAW

This part of the Article situates our empirical study of gender inequality in patent litigation within the scholarly literature on gender and patents. It

24. See Rochelle Cooper Dreyfuss, *Giving the Federal Circuit a Run for Its Money: Challenging Patents in the PTAB*, 91 NOTRE DAME L. REV. 235, 242–49 (2015); see also *infra* notes 131–39 and accompanying text (providing more detail about proceedings before the Board).

25. See *infra* Section IV.C.

26. See *infra* note 225.

27. Robin Ely & David A. Thomas, *Getting Serious About Diversity: Enough Already with the Business Case*, HARV. BUS. REV., Nov.–Dec. 2020, <https://hbr.org/2020/11/getting-serious-about-diversity-enough-already-with-the-business-case> [<https://perma.cc/RU4L-T2L8> (dark archive)] (arguing that “an ‘add diversity and stir’ approach,”—meaning “[i]ncreasing the numbers of traditionally underrepresented people in [the] workforce”—“does not automatically produce benefits” in a “firm’s effectiveness or financial performance”).

28. See Susan Sturm, *From Gladiators to Problem-Solvers: Connecting Conversations About Women, the Academy, and the Legal Profession*, 4 DUKE J. GENDER L. & POL’Y. 119, 140 (1997).

29. For additional discussion of structural changes that would help bring greater equality to the patent bar, see *infra* Section IV.D.

begins by discussing existing data on gender inequality in the practice of patent law and then explores prior analyses of gender and patent doctrine.

A. *Women's Representation in Patent Practice*

Over half of law students today are women;<sup>30</sup> that number has been over 40% since the mid-1980s.<sup>31</sup> Yet equal representation of women among law students has not meant equal representation of women in law practice, particularly at private law firms. Though women comprise nearly half of all associates in private law practice (and over half of all summer associates),<sup>32</sup> only about 38% of attorneys at the largest U.S. law firms are women.<sup>33</sup> And the higher up in the hierarchy you go, the fewer women you find. Less than 20% of law firm equity partners are women.<sup>34</sup> Women of color are even more absent: they comprise only 3% of equity partners and 9% of law firm attorneys overall.<sup>35</sup> In a recent survey of 200 large law firms, the National Association for Women Lawyers found that the most highly compensated attorney at 93% of those firms was a man.<sup>36</sup>

Elite appellate litigation is an area of law practice where gender inequality is particularly noticeable. In the U.S. Supreme Court's 2019 Term, women presented oral argument only 13% of the time (20 out of 156 arguments).<sup>37</sup> As we discuss in more detail below, in any given Term, the percentage of women presenting argument has rarely nudged above 20%.<sup>38</sup> Empirical studies suggest that the Justices do not allow women advocates to speak before the Court as often as male advocates and that women advocates face more negative

30. See Elizabeth Olson, *Women Make Up Majority of U.S. Law Students for First Time*, N.Y. TIMES (Dec. 16, 2016), <https://www.nytimes.com/2016/12/16/business/dealbook/women-majority-of-us-law-students-first-time.html> [<https://perma.cc/C8D8-F6VF> (dark archive)].

31. Janet Taber, Marguerite T. Grant, Mary T. Huser, Risë B. Norman, James R. Sutton, Clarence C. Wong, Louise E. Parker & Claire Picard, Comment, *Gender, Legal Education, and the Legal Profession: An Empirical Study of Stanford Law Students and Graduates*, 40 STAN. L. REV. 1209, 1209 (1988); Richard K. Neumann Jr., *Women in Legal Education: What the Statistics Show*, 50 J. LEGAL EDUC. 313, 314 (2000).

32. JAMES LEIPOLD, NALP UPDATE: THE LEGAL EMPLOYMENT MARKET 6, 9 (2022) (on file with the North Carolina Law Review) (reporting that 48.2% of associates are women).

33. Jacqueline Bell, *Law360's Glass Ceiling Report: What You Need To Know*, LAW360 (Sept. 13, 2021, 3:03 PM), <https://www.law360.com/appellate/articles/1418221/law360-s-glass-ceiling-report-what-you-need-to-know> [<https://perma.cc/M2VK-D4KH> (staff-uploaded, dark archive)].

34. *Id.*

35. *Id.*

36. NAT'L ASS'N OF WOMEN LAWS., 2019 SURVEY REPORT ON THE PROMOTION AND RETENTION OF WOMEN IN LAW FIRMS 2 (2019).

37. Kimberly Strawbridge Robinson, *An Uphill Climb for Women Supreme Court Advocates Gets Steeper*, BLOOMBERG L. (May 15, 2020, 4:54 AM), <https://news.bloomberglaw.com/us-law-week/an-uphill-climb-for-women-supreme-court-advocates-gets-steeper> [<https://perma.cc/7WVX-LSK5> (staff-uploaded, dark archive)].

38. See *infra* Part II.



comments from the bench.<sup>39</sup> Likewise, the male Justices themselves tend to speak more freely and at greater length than the female Justices.<sup>40</sup>

Notably, women tend to be better represented in legal work on behalf of the government as compared to the private sector. Among lawyers roughly a decade into their careers, 41% of men are in private practice at law firms, compared to 34% of women.<sup>41</sup> But those numbers flip in government practice: 20% of women a decade into their legal careers work in government, compared to 16% of men.<sup>42</sup> Women's more frequent representation tends to hold at higher levels of government, too. For example, one-third of judges on the federal courts of appeals are women, including five of the twelve active judges on the Federal Circuit.<sup>43</sup> Across all lower federal courts, 34.5% of active judges are women.<sup>44</sup> And the Office of the Solicitor General, which represents the federal government in litigation at the Supreme Court, has had a roughly equal balance of male and female lawyers in recent years.<sup>45</sup>

In intellectual property and patent law, gender disparities are particularly stark. According to the American Intellectual Property Law Association, women comprise only 30% of intellectual property attorneys at law firms.<sup>46</sup> A recent survey of 107 trials in intellectual property cases found that 76% of lead attorneys were male and 74% of partners on those trials were male.<sup>47</sup> The racial

39. See Tiffany Lindom, Charles Gregory & Timothy R. Johnson, *Gender Dynamics and Supreme Court Oral Arguments*, 2017 MICH. ST. L. REV. 1033, 1033 (2017).

40. See Tonja Jacobi & Dylan Schweers, *Justice, Interrupted: The Effect of Gender, Ideology, and Seniority at Supreme Court Oral Arguments*, 103 VA. L. REV. 1379, 1403–04 (2017); see also Leah M. Litman, *Muted Justice*, 169 U. PA. L. REV. ONLINE 134, 136 (2020) (finding that the longest questioning periods permitted by the Chief Justice in the arguments conducted by telephone in the spring of 2020 were from male Justices).

41. See GABRIELE PLICKERT, RONIT DINOVTZER, BRYANT G. GARTH, ROBERT NELSON, REBECCA SANDEFUR, JOYCE STERLING, DAVID WILKINS, TONY LOVE & CHANTREY J. MURPHY, *AFTER THE JD III: THIRD RESULTS FROM A NATIONAL STUDY OF LEGAL CAREERS* 65 (2017), [americanbarfoundation.org/uploads/cms/documents/ajd3report\\_final\\_for\\_distribution.pdf](http://americanbarfoundation.org/uploads/cms/documents/ajd3report_final_for_distribution.pdf) [<https://perma.cc/RMJ7-N2K9>].

42. *Id.*

43. See *infra* Section III.B.1.

44. DEMOCRACY & GOV'T REFORM TEAM, CTR. FOR AM. PROGRESS, *EXAMINING THE DEMOGRAPHIC COMPOSITIONS OF U.S. CIRCUIT AND DISTRICT COURTS* 7 (2020), <https://www.americanprogress.org/wp-content/uploads/2020/02/Judicial-Diversity-Circuit-District-Courts.pdf> [<https://perma.cc/5GQF-3YWN>]. Similarly, four of the nine current Supreme Court Justices are women.

45. See *infra* Section III.A.

46. J. Shontavia Johnson, Tonya M. Evans & Yolanda M. King, *Diversifying Intellectual Property Law: Why Women of Color Remain "Invisible" and How To Provide More Seats at the Table*, 10 LANDSLIDE 4, 31 (2018).

47. Dani Kass, *Juries Are Drawn to Diversity in Patent Trials, Attys Say*, LAW360 (Oct. 27, 2020, 10:26 PM), <https://www.law360.com/ip/articles/1318813> [<https://perma.cc/XK8N-U7HY>] (staff-uploaded, dark archive)] (reporting on a study by legal consultant Tara Trask).

disparities were also stark: 87% of the lead attorneys were white, as were 80% of the partners.<sup>48</sup>

Numerous women working in patent litigation in the late 1990s reported *never* appearing against or working with another female attorney.<sup>49</sup> Even today, only about 17% of registered patent attorneys and 20% of patent agents (that is, lawyers and nonlawyers, respectively, who are admitted to practice at the PTO) are women.<sup>50</sup> A 2019 report on *Women at the Patent Trial and Appeal Board* found that women made up only 10% of total attorney appearances in the new post-issuance proceedings that began operating in 2013.<sup>51</sup> That study also found that, of the 100 attorneys who had appeared in the most Patent Trial and Appeal Board (“PTAB”) proceedings, only six were women.<sup>52</sup> In short, “the descriptive empirics of gender in the patent system are relatively straightforward: women are at every level pervasively absent.”<sup>53</sup>

Yet the absence of women is more striking in some areas of patent practice than in others. In patent law, like in law practice more generally, women are better represented in government than at law firms. Though only 10% of lawyers appearing at the PTAB are women, over 30% of the PTAB’s *judges* are women.<sup>54</sup> Similarly, less than 20% of lawyers registered to practice at the PTO are women, but nearly 30% of patent examiners (the PTO employees who review patent applications) are women.<sup>55</sup> And, as discussed below, about half of

48. *Id.*

49. Kara Hagen, *An Essay on Women and Intellectual Property Law: The Challenges Faced by Female Attorneys Pursuing Careers in Intellectual Property*, 15 SANTA CLARA COMPUT. & HIGH TECH. L.J. 139, 143 (1999).

50. Saurabh Vishnubhakat, *Gender Diversity in the Patent Bar*, 14 J. MARSHALL REV. INTELL. PROP. L. 67, 80 (2014). Practice at the Patent Office, whether by a registered patent attorney or by a nonlawyer patent agent, consists of two main roles: (1) applying for and obtaining patents on behalf of clients (“patent prosecution,” in the argot of patent law) and (2) representing clients in post-issuance proceedings to reconsider the validity of previously issued patents. For an overview of the patent prosecution process, see Sean Tu, *Luck/Unluck of the Draw: An Empirical Study of Examiner Allowance Rates*, 2012 STAN. TECH. L. REV. 10, 12–16 (2012). And for a discussion of post-issuance proceedings at the Patent Office, see *infra* Section III.B.3.

51. PTAB BAR ASS’N, WOMEN AT THE PTAB: POST-GRANT PROCEEDINGS 3 (2019), <https://host8.viethwebhosting.com/~ptab/docs/PTAB-Bar-Association-2019-Report-on-Women-at-the-PTAB.pdf> [<https://perma.cc/7L9R-Y4GG>]. The new proceedings are designed mainly to give defendants in patent infringement suits a quicker and cheaper route to challenge the validity of the patents they are accused of infringing. The proceedings have been enormously popular—the PTAB has received over 10,000 petitions for review in the first eight years of their existence. See J. Jonas Anderson & Paul R. Gugliuzza, *Federal Judge Seeks Patent Cases*, 71 DUKE L.J. 419, 460 (2021). For more background on the new proceedings, see *infra* notes 128–37 and accompanying text.

52. PTAB BAR ASS’N, *supra* note 51, at 5.

53. Dan L. Burk, *Diversity Levers*, 23 DUKE J. GENDER L. & POL’Y 25, 31 (2015).

54. Amy Semet, *A Data-Driven Analysis of the Patent Trial and Appeal Board’s First Decade* (unpublished manuscript) (on file with author).

55. Deepak Hegde & Manav Raj, *Does Gender Affect Work? Evidence from U.S. Patent Examination 2* (Feb. 21, 2019) (unpublished manuscript) (on file with the North Carolina Law Review). The proportion of women registering to practice at the PTO in recent years has crept

the lawyers at the PTO's Solicitor's Office, which represents the PTO in litigation at the Federal Circuit, are women.<sup>56</sup>

### B. *Gender Bias in Patent Law*

This section engages prior scholarship on gender bias in patent law and situates the study of patents and gender, including this Article's study of gender inequality in patent litigation, within broader feminist theorizing.

Starting with basic patent doctrine, critics have noted that the subject matter eligible for patents<sup>57</sup> leans heavily toward mechanical and technological inventions; social and communicative innovations, which are viewed as typically associated with so-called feminine values, tend to be excluded.<sup>58</sup> The test for patent-eligible subject matter,<sup>59</sup> commentators have observed, is "based on inherently androcentric definitions of 'invention,' 'technology,' and 'industrial application,'" which, they suggest, may exclude inventions that contradict those androcentric foundations.<sup>60</sup>

Consider also "*Winslow's tableau*," a classic judicial description of the framework for analyzing the nonobviousness<sup>61</sup> of an invention under § 103 of the Patent Act: "[P]icture the inventor as working in his shop with the prior art references—which he is presumed to know—hanging on the walls around

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upwards, but the metrics used for determining the gender of new patent practitioners are highly imperfect. See Christopher Turoski, *We Need Reliable Data on Patent Agent, Atty Gender Diversity*, LAW360 (June 24, 2021, 4:19 PM), <https://www.law360.com/articles/1395642/we-need-reliable-data-on-patent-agent-atty-gender-diversity> [<https://perma.cc/HH4H-NBLY> (staff-uploaded, dark archive)].

56. See *infra* Figure 19.

57. Section 101 of the Patent Act lists four types of inventions eligible for patenting: "process[es], machine[s], manufacture[s], and composition[s] of matter." 35 U.S.C. § 101. In addition, a judge-created limitation on patent eligibility forbids patents "directed to" abstract ideas, laws of nature, and natural phenomena unless those patents also contain an "inventive concept," "i.e., an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [abstract idea, law of nature, or natural phenomenon] itself.'" *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 217–18 (2014) (quoting *Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc.*, 556 U.S. 66, 73 (2012)).

58. Shlomit Yanisky-Ravid, *Eligible Patent Matter—Gender Analysis of Patent Law: International and Comparative Perspectives*, 19 AM. U. J. GENDER, SOC. POL'Y & L. 851, 860 (2011).

59. See *supra* note 57 and accompanying text.

60. Miriam Marcowitz-Bitton, Yotam Kaplan & Emily Michiko Morris, *Unregistered Patents & Gender Equality*, 43 HARV. J.L. & GENDER 47, 58 (2020); see also Yanisky-Ravid, *supra* note 58, at 865 (noting that, under prevailing doctrine, methods for "improving teaching or learning abilities" and "social inventions"—such as "a new method to improve the quality of life or a new organizational structure"—may not be eligible for patenting).

61. In addition to reciting patent-eligible subject matter, see *supra* note 57 and accompanying text, the Patent Act also requires an invention to be novel, nonobvious, and fully disclosed, see 35 U.S.C. §§ 102, 103, 112. The nonobviousness requirement is often viewed as the most important requirement of patentability because it asks whether the claimed invention is enough of an improvement on preexisting technology (what patent lawyers call "the prior art") to warrant patent exclusivity. See *Graham v. John Deere Co.*, 383 U.S. 1, 14–15 (1966).

him.”<sup>62</sup> Not only does the test itself presume that the inventor is a man, it emphasizes individualistic and competitive means of generating knowledge, which, critics have suggested, may devalue the collaborative efforts of teams of innovators, where women may be better represented.<sup>63</sup>

In addition, various doctrines of patent law, including the nonobviousness requirement for patent validity and important questions about patent scope,<sup>64</sup> are applied from the hypothetical, purportedly objective perspective of a “person having ordinary skill in the art” (“PHOSITA”). But this objective standard may not reflect the diversity of the inventive community and the varied and cumulative influences that can lead to innovation.<sup>65</sup> More generally, as Kara Swanson has shown, even doctrines of intellectual property law that appear neutral on their face—for instance, the *person* of ordinary skill in the art—often assume a male perspective in practice.<sup>66</sup> Swanson observes: “[W]hen it comes to women’s ways of creating or knowing—food or fashion in copyright, or tending sick cats as the basis for invention in patents—the expansive doctrines of intellectual property subject matter suddenly narrow, and the definition of authorship and invention are revealed to assume masculinity.”<sup>67</sup>

Observations about the gender bias of objective standards like the PHOSITA build on longstanding feminist criticisms of “reasonableness” standards, such as tort law’s reasonably prudent person.<sup>68</sup> That “reasonable person” standard was derived from the “reasonable man” test, under which courts historically relied on masculine metaphors and reflected the experiences of men.<sup>69</sup> The “reasonable” aspect of that standard has likewise been tethered to values stereotypically identified with men. As Naomi Cahn explains, “[a]

62. *In re Winslow*, 365 F.2d 1017, 1020 (C.C.P.A. 1966). The *In re Winslow* opinion was written by Judge Giles Rich, one of the primary authors of the 1952 Patent Act (which contains the core provisions of U.S. patent law that remain in force today) and one of the most famous patent jurists of all time. See John F. Witherspoon, *A Tribute to Judge Giles S. Rich*, 100 J. PAT. & TRADEMARK OFF. SOC’Y 4, 5 (2018).

63. See Jessica C. Lai, *Patents and Gender: A Contextual Analysis*, 10 QUEEN MARY J. INTELL. PROP. 283, 303 (2020); Burk, *Do Patents Have Gender?*, *supra* note 16, at 890.

64. Scope questions are wrapped up in what patent lawyers call “claim construction,” the process by which a judge interprets the patent’s claims, which are the sentences that appear at the end of the patent document and specifically recite the patentee’s invention. See *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996).

65. Burk, *Do Patents Have Gender?*, *supra* note 16, at 892, 903; see also JESSICA SILBEY, *THE EUREKA MYTH: CREATORS, INNOVATORS, AND EVERYDAY INTELLECTUAL PROPERTY* 3 (2014) (“[W]e should recognize and revere the labor of everyday scientists; they work in droves and teams to transform the frontiers of our physical experience bit by bit, like colonies of ants building and supporting a hill of dirt.”).

66. Swanson, *Intellectual Property and Gender*, *supra* note 19, at 185.

67. *Id.*

68. See, e.g., Leslie Bender, *A Lawyer’s Primer on Feminist Theory and Tort*, 38 J. LEGAL EDUC. 3, 20–25 (1988); Martha Chamallas, *Feminist Legal Theory and Tort Law*, in *RESEARCH HANDBOOK ON FEMINIST JURISPRUDENCE* 386, 386–405 (Cynthia Grant Bowman & Robin West eds., 2019).

69. Alan D. Miller & Ronen Perry, *The Reasonable Person*, 87 N.Y.U. L. REV. 323, 361–62 (2012).

reasonable person may resemble a reasonable man . . . Existing conceptions of reasonableness are gendered through their creation of a standard of conduct based on rationality, exclusive of emotions and morality.”<sup>70</sup> Scholars have called for conceptions of law that do not cater to the presumed neutrality and dispassion that rationality implies.<sup>71</sup> Cahn joins other feminist legal theorists who note the ways in which the autonomous individualism of reasonableness precludes collective responsibility.<sup>72</sup> These scholars call for a reimaged liability standard that queries “whether a defendant exhibited responsible care or concern for another’s safety, welfare, or health, akin to that demonstrated by a responsible neighbor or a social acquaintance.”<sup>73</sup>

Applying a feminist critique to patent law, scholars have suggested relaxing the PHOSITA’s presumed omniscience about all preexisting technology, reforming patent validity doctrines to recognize the cumulative nature of invention, and placing a greater focus on the *responsibilities* that stem from a patent grant rather than treating the patent as simply a right to exclude.<sup>74</sup> That is not to argue that collaboration, empathy, or collective responsibility are exclusively the domain of women. Indeed, there are real costs and unintended consequences in essentializing the experiences of women as noncompetitive, collaborative, collective-oriented, or emotive.<sup>75</sup> Rather, it is to point out that

70. Naomi R. Cahn, *The Looseness of Legal Language: The Reasonable Woman Standard in Theory and in Practice*, 77 CORNELL L. REV. 1398, 1405 (1992).

71. See Kathryn Abrams & Hila Keren, *Who’s Afraid of Law and the Emotions?*, 94 MINN. L. REV. 1997, 2003–12, 2063 (2010) (summarizing scholarship challenging assumptions of legal rationality, as well as a law/emotion dichotomy, and proposing doctrinal revision); Terry A. Maroney, *Law and Emotion: A Proposed Taxonomy of an Emerging Field*, 30 L. & HUM. BEHAV. 119, 119 (2006) (explaining that “[t]he notion that reason and emotion are cleanly separable—and that law admits only of the former—is deeply engrained,” though it recently has come under attack).

72. See Leslie Bender, *Feminist (Re)torts: Thoughts on the Liability Crisis, Mass Torts, Power, and Responsibilities*, 1990 DUKE L.J. 848, 895–96 (advocating for a “paradigm shift in the values and assumptions of tort law from a vision of responsibility rooted in atomistic individuals and commodity exchange to one rooted in caregiving”); Martha Chamallas & Linda K. Kerber, *Women, Mothers, and the Law of Fright: A History*, 88 MICH. L. REV. 814, 827, 837, 862 (1990) (noting that the “reasonable man” of tort law undermined relational interests and discounted family relationships). Robin West famously argued the legal system represents the triumph of “male” over “female” morality: “[A] society and state the *raison d’être* of which is the satisfaction of the interests, preferences, wishes, desires, and whims of . . . atomized individuals.” ROBIN WEST, *CARING FOR JUSTICE* 4–5 (1997). West follows in the footsteps of Carol Gilligan and others, describing an ethic of care that, counter to the prevailing ethic of law, is grounded in “connections to others” rather than individual interests. *Id.* at 6; see also Carol Gilligan, *Reply to Critics*, in *AN ETHIC OF CARE: FEMINIST AND INTERDISCIPLINARY PERSPECTIVES* 207, 207 (Mary Jeanne Larrabee ed., 2016) (responding to critiques of Gilligan’s book, *IN A DIFFERENT VOICE: PSYCHOLOGICAL THEORY AND WOMEN’S DEVELOPMENT* (1982)).

73. Miller & Perry, *supra* note 69, at 365.

74. Burk, *Do Patents Have Gender?*, *supra* note 16, at 907–18.

75. See Cahn, *supra* note 70, at 1403 (“Feminist challenges to the traditional stereotype of the reasonable man and its categorization of women, too often result in new stereotypes and inflexible categories of our own.”); see also Jane Wong, *The Anti-Essentialism v. Essentialism Debate in Feminist Legal Theory: The Debate and Beyond*, 5 WM. & MARY J. WOMEN & L. 273, 281 (1999) (“[I]t is

scholarship on gender bias in patent law is in conversation with feminist theorizing that identifies the social values marginalized by traditional legal doctrines.<sup>76</sup>

Those values not only inform critique of patent law doctrines, they also help contextualize the gender disparities in patent law practice discussed above and reflected in the empirical study presented below. Despite a proliferation of laws and policies prohibiting discrimination over the past several decades, women are still underrepresented at the highest levels in many white-collar professions.<sup>77</sup> Recent scholarship on how and why women succeed or fail in corporate contexts emphasizes not only that corporate employers regularly treat men and women differently (by, for example, disproportionately assigning women time-consuming administrative tasks),<sup>78</sup> but also that corporate *culture* sets up women to fail.<sup>79</sup> As this literature notes, big business is characterized by

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impractical to treat all women as being the same when working to effect social change through law reform.”); Linda C. McClain, “Atomistic Man” Revisited: Liberalism, Connection, and Feminist Jurisprudence, 65 S. CAL. L. REV. 1171, 1174 (1992) (noting common ground between various strands of feminist theory). See generally JANET HALLEY, PRABHA KOTISWARAN, RACHEL REBOUCHÉ & HILA SHAMIR, GOVERNANCE FEMINISM: AN INTRODUCTION 23–31 (2018) (providing a typology of liberal, dominance, and cultural feminisms).

76. Robin West has articulated this point outside of the patent system:

[T]he harms women sustain and have sustained by virtue of their unequal status across two millennia have been thoroughly privatized and, for that reason, rendered invisible to law. These harms have been blocked from view by literal and figurative walls of patriarchal privilege, modernist commitments to familial privacy, ideologies weaponizing the differences in the basic humanity of men and women, and widely shared beliefs in women’s lesser capacities for reason, principled moral action, and political capacity, as well as shared beliefs in their greater propensity toward not just domesticity, but also toward submission and obsequious deference, all viewed, collectively, as central to either female maternalism or female sexuality.

Robin West, *Women in the Legal Academy: A Brief History of Feminist Legal Theory*, 87 FORDHAM L. REV. 977, 992 (2018).

77. See, e.g., Afra Afsharipour, *Women and M&A*, 12 U.C. IRVINE L. REV. 359, 362 (2022) (“[C]elebrated M&A cases rarely feature women executives, board members, or lawyers; and elite M&A legal practice remains dominated by men.”). Consider that 47% of entrants into high-level corporate management are women but only 21% make it to the “C-suite”—the offices that direct corporate strategy and decide the future of a company. NAOMI CAHN, JUNE CARBONE & NANCY LEVIT, SHAFTEd: WHY WOMEN LOSE IN A WINNER-TAKE-ALL WORLD (forthcoming 2022) (on file with the North Carolina Law Review).

78. DEBORAH L. RHODE, THE TROUBLE WITH LAWYERS 66–68 (2015) [hereinafter RHODE, TROUBLE].

79. See, e.g., Michelle K. Ryan & S. Alexander Haslam, *The Glass Cliff: Evidence That Women Are Over-Represented in Precarious Leadership Positions*, 16 BRIT. J. MGMT. 81, 85–87 (2005) (finding that poorly performing companies were more likely to appoint women to leadership positions, who were then blamed for negative outcomes that were largely beyond their control); see also SYLVIA ANN HEWLETT, CAROLYN BUCK LUCE, LISA J. SERVON, LAURA SHERBIN, PEGGY SHILLER, EYTAN SOSNOVICH & KAREN SUMBERG, THE ATHENA FACTOR: REVERSING THE BRAIN DRAIN IN SCIENCE, ENGINEERING, AND TECHNOLOGY, HARV. BUS. REV., June 2008, at 27, [https://lawcat.berkeley.edu/record/1127365/files/0-Athena\\_Factor\\_\\_Brain\\_Drain\\_in\\_Scienc.pdf](https://lawcat.berkeley.edu/record/1127365/files/0-Athena_Factor__Brain_Drain_in_Scienc.pdf) [htt

a winner-takes-all mentality, fueled by compensation systems that tie financial rewards to around-the-clock availability.<sup>80</sup> Corporate culture defined by those characteristics thrives on what have been called “masculinity contests”: the “valoriz[ation of] masculine traits like competition, risk-taking, and win-at-all-cost mentalities.”<sup>81</sup> Just as patent law doctrines embed gendered conceptions of discovery and innovation tied to individualism and exclusion, corporate culture—including, arguably, the culture of private law practice—has propagated gender inequality by rewarding competition and self-promotion and by facilitating the emergence of small, insular networks of powerbrokers who reap outsized financial and reputational rewards.<sup>82</sup>

Though this Article cannot cover the immensity of theorizing on gender bias in the workplace or in law, we hope to contribute to that discourse by empirically documenting women’s lack of involvement in high-level patent litigation. We also hope to shed light on the difficulty of determining *why* gender inequality exists in patent law and the patent system. It may be, as scholars have suggested, that the values of the patent system (individualism and competition, to name two) do not align with women’s lived experiences.<sup>83</sup> It is also possible that women operate in parts of the patent system that are sometimes overlooked—as government lawyers, for example, as we discuss below.<sup>84</sup> Our findings suggest that any gender inequality in patent practice may not be about the gendered nature of patent law or the gender bias of the patent system, but the culture and context in which patent law practice takes place.<sup>85</sup>

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[ps://perma.cc/X96G-GWKB](https://perma.cc/X96G-GWKB) (staff-uploaded archive)] (finding that women in science, engineering, and technology companies are reluctant to take risks because they believe they will not get “second chances”).

80. Carbone et al., *Rule-Breaking*, *supra* note 13, at 1109 (citing Jennifer L. Berdahl, Marianne Cooper, Peter Glick, Robert W. Livingston & Joan C. Williams, *Work as a Masculinity Contest*, 74 J. SOC. ISSUES 422, 423 (2018)); *see also* Claire Cain Miller, *Women Did Everything Right. Then Work Got ‘Greedy’*, N.Y. TIMES (Apr. 26, 2019), <https://www.nytimes.com/2019/04/26/upshot/women-long-hours-greedy-professions.html> [<https://perma.cc/87NP-Z3Y7> (dark archive)].

81. Carbone et al., *Rule-Breaking*, *supra* note 13, at 1109.

82. *Id.* at 1123–24.

83. *See, e.g.*, Burk, *Do Patents Have Gender?*, *supra* note 16, at 906 (“The patent incentive may skew who will be motivated, and what technologies they will be motivated to develop.”).

84. *See infra* Section III.B.

85. For another empirical study highlighting the importance of institutional considerations in creating gender inequality in the patent system, *see* Gauri Subramani, Abhay Aneja & Oren Reshef, *Try, Try, Try Again? Persistence and the Gender Innovation Gap* 9, 24–26 (unpublished manuscript), <https://haas.berkeley.edu/wp-content/uploads/Try-try-try-again-Persistence-and-the-Gender-Innovation-Gap.pdf> [<https://perma.cc/3R7S-GABY>] (finding that women inventors are less likely than male inventors to challenge application rejections from the Patent Office but that the gender gap is reduced when the application is supported by an employer or the inventor has legal representation).

## II. EMPIRICAL METHODOLOGY

Two original datasets underpin the empirical analysis in this Article. One contains all lawyers who conducted oral argument in every Supreme Court case (not just patent cases) from 2010 through 2019. The other contains all lawyers who argued patent cases at the Federal Circuit over that same time period.

One key feature is that, in both datasets, each lawyer is coded for gender. Social scientists and legal scholars studying women's involvement in the patent system have coded names for gender in various ways: some studies use baby name books,<sup>86</sup> others use popular name data published by the Social Security Administration,<sup>87</sup> still others employ proprietary software that assigns gender probabilities to specific names.<sup>88</sup> This study relies on two sources. The first is a gender name dictionary that the World Intellectual Property Organization ("WIPO") developed for the purpose of analyzing inventor gender in international patent applications.<sup>89</sup> The WIPO dictionary contains a staggering 6.2 million names drawn from 182 countries<sup>90</sup>—more than adequate for this project, which involves lawyers with names that, by and large, would have clear gender connotations to an American reader.<sup>91</sup> Second, because the datasets are not overwhelmingly large (the Supreme Court dataset contains about 700 lawyers and the Federal Circuit dataset contains about 2,800 lawyers) and because most of the lawyers in them are still alive and actively practicing, we were often able to research the lawyer in question by finding a biographic webpage on which the lawyer identified their gender.<sup>92</sup>

86. *E.g.*, U.S. PAT. & TRADEMARK OFF., U.S. DEP'T OF COM., *BUTTONS TO BIOTECH 1996 UPDATE REPORT: U.S. PATENTING BY WOMEN, 1997 TO 1996*, at 8 n.10 (1999), [https://www.uspto.gov/web/offices/ac/ido/oeip/taf/wom\\_98.pdf](https://www.uspto.gov/web/offices/ac/ido/oeip/taf/wom_98.pdf) [<https://perma.cc/UEE9-Z7BY>].

87. *E.g.*, Kyle Jensen, Balázs Kovács & Olav Sorenson, *Gender Differences in Obtaining and Maintaining Patent Rights*, 36 *NATURE BIOTECH.* 307, 307 (2018).

88. *E.g.*, OFF. OF THE CHIEF ECONOMIST, U.S. PAT. & TRADEMARK OFF., *PROGRESS AND POTENTIAL*, *supra* note 20, at 14.

89. *See generally* Gema Lax Martinez, Julio Raffo & Kaori Saito, *Identifying the Gender of PCT Inventors* (World Intell. Prop. Org., Working Paper No. 33, 2016), [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_econstat\\_wp\\_33.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_econstat_wp_33.pdf) [<https://perma.cc/JN8N-DXAN>] (compiling data and describing the methods used to create the dictionary).

90. *Id.* at 2.

91. For that reason, we used the WIPO dictionary's indication of the gender connotation of a particular name in the United States to code the lawyers in our dataset. Some names that the WIPO dictionary lists as male in the United States are listed as female or unclear elsewhere (e.g., "Jordan" is listed as male in most countries, including the United States, but as female in Great Britain), and vice versa (e.g., "Andrea" is listed as female in most countries, including the United States, but as male in Italy). We of course acknowledge the danger of stereotypes in the gender connotations of names, but we note that the WIPO dictionary's probabilities are based on the *actual* frequency with which a particular name is borne by persons with a particular gender identity in a given country.

92. This, too, is a technique commonly used in the literature on gender and patents. *See, e.g.*, Kjersten Bunker Whittington & Laurel Smith-Doerr, *Women Inventors in Context: Disparities in Patenting Across Academia and Industry*, 22 *GENDER & SOC'Y* 194, 201–02 (2008); *see also* Christopher A. Cotropia & Lee Petherbridge, *Gender Disparity in Law Review Citation Rates*, 59 *WM. & MARY L.*



Each lawyer is coded in the dataset as either male or female—a binary approach that does not account for the myriad ways in which gender identity manifests.<sup>93</sup> Though we are sensitive to this issue, it bears emphasizing that (1) this study often determined gender identity by consulting biographical materials prepared by the lawyers themselves and (2) the datasets are large enough that, even if a few imperfections exist, they will not affect the overall results.

As for the two datasets, the first contains, among other information, the identity and organizational affiliation (law firm or government entity, for example) of every lawyer who conducted oral argument in every case (not just patent cases) heard by the Supreme Court from October Terms (“OTs”) 2010 through 2019.<sup>94</sup> Each lawyer was then coded for gender consistent with the methodology described above.

The second dataset contains all Federal Circuit decisions in patent cases from 2010 through 2019. The starting source for that dataset was *The Compendium of Federal Circuit Decisions*,<sup>95</sup> developed by Jason Rantanen,<sup>96</sup> which provided a comprehensive list of Federal Circuit decisions (including precedential opinions, nonprecedential opinions, and summary affirmances

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REV. 771, 781 (2018) (basing initial gender coding on whether a human coder “considered the [subject’s first] name to be commonly associated with a particular gender,” but noting that “if the coder had any question about the [subject]’s gender, the coder did a search for the individual’s law school[] or other employment web page”).

93. The difficulty of conducting an empirical study that would account for identities beyond a male-female binary speaks to how far there is to go in assessing inclusion and diversity in the legal profession. See, e.g., Ellen (Ellie) Krug, *We Hear You Knocking: An Essay on Welcoming “Trans” Lawyers*, 41 WM. MITCHELL L. REV. 181, 202 (2015) (“Training and education about transgender people, something I call ‘Trans 101,’ will pay off by increasing positive familiarity that will, in turn, foster acceptance. The result will be a workplace of compassion and respect for ‘trans’ people, which greatly increases a transgender lawyer’s chances for success.”); Peter Blanck, Fitore Hyseni & Fatma Altunkol Wise, *Diversity and Inclusion in the American Legal Profession: Discrimination and Bias Reported by Lawyers with Disabilities and Lawyers Who Identify As LGBTQ+*, 47 AM. J.L. & MED. 9, 45 (2021) (documenting that lawyers identifying as LGBTQ+ faced overt and subtle discrimination at higher rates than their non-LGBTQ+ peers).

94. The Supreme Court’s journal, which contains the official minutes of the Court from each day the Court is in session, provides the identities of the lawyers conducting oral argument. *Journal*, SUP. CT. U.S., <https://www.supremecourt.gov/orders/journal.aspx> [<https://perma.cc/45TU-X2H7>]. In most circumstances, the briefs in the case, which were usually available on Westlaw or ProQuest Supreme Court Insight, provided information about each lawyer’s organizational affiliation. The oral argument transcripts, which often list organizational affiliation for government lawyers, and the comprehensive sets of case materials found on SCOTUSblog were also useful in obtaining affiliation information. See, e.g., *October Term 2019*, SCOTUSBLOG, <https://www.scotusblog.com/case-files/terms> [<https://perma.cc/PL26-XT4>].

95. *The Compendium of Federal Circuit Decisions*, UNIV. IOWA (June 28, 2019), <https://empirical.law.uiowa.edu/compendium-federal-circuit-decisions> [<https://perma.cc/UK8B-G2XB>] (last updated Jan. 4, 2021).

96. For a description of the *Compendium* and its contents, see Jason Rantanen, *The Landscape of Modern Patent Appeals*, 67 AM. U. L. REV. 985, 997–1007 (2018).

under Federal Circuit Rule 36) in appeals from district court judgments and PTO decisions from 2010 through 2019.<sup>97</sup> From that initial list, it was possible to eliminate trademark cases and add appeals in patent cases from the U.S. International Trade Commission.

The slip opinions (and Rule 36 affirmances) on the Federal Circuit's website provided data on the identity and organizational affiliation of the lawyers who presented oral argument in each case.<sup>98</sup> In calculating the number of arguments presented by any given lawyer, the unit of measurement was one Federal Circuit decision. For example, if the Federal Circuit consolidated several appeals and issued one opinion resolving all of those appeals, the attorneys were credited with having presented one argument. Conversely, if the court decided two or more related cases in separate opinions, the attorneys were credited with having presented multiple arguments, even if those arguments were heard by the same panel on the same day.<sup>99</sup> Each lawyer was then coded for gender consistent with the methodology described above.

### III. THE GENDER (IM)BALANCE IN APPELLATE PATENT LITIGATION

Our data demonstrate one thing quite clearly: oral arguments in appellate patent litigation, both at the Supreme Court and the Federal Circuit, are dominated by male attorneys. But that does not mean women are entirely absent from patent litigation. To the contrary, there are certain areas in which gender parity exists, most notably in patent litigation on behalf of the federal government.

#### A. *Supreme Court*

Before looking at the data for patent cases at the Supreme Court, some background statistics provide helpful context. Recent studies have documented

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97. For an explanation of the different types of opinions and orders the Federal Circuit uses to dispose of appeals, including the court's frequent and controversial use of summary affirmances, see Paul R. Gugliuzza & Mark A. Lemley, *Can a Court Change the Law by Saying Nothing?*, 71 VAND. L. REV. 765, 778–80 (2018).

98. Cases that were argued include a notation along the lines of “[Lawyer], [Firm], [City, State], argued for [Party].” See, e.g., *Haemonetics Corp. v. Baxter Healthcare Corp.*, No. 2009-1557, slip op. at 1 (Fed. Cir. June 2, 2010) (emphasis added). Cases that were not argued and were submitted on the briefs say merely “[Lawyer], [Firm], [City, State], for [Party].” See, e.g., *Wallace v. Ideavillage Prods. Corp.*, No. 2015-1077, slip op. at 1 (Fed. Cir. Mar. 3, 2016) (emphasis added).

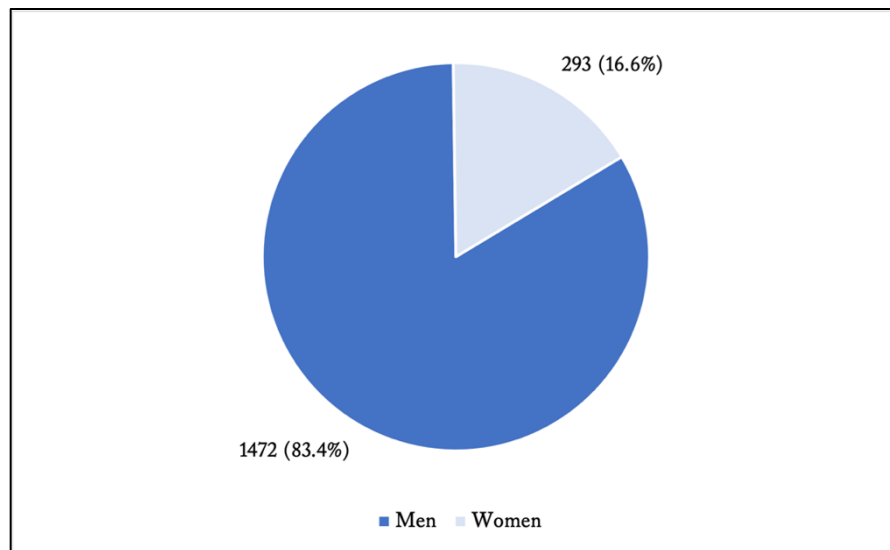
99. The monthly and daily argument schedules posted on the Federal Circuit's website could provide a more straightforward way to calculate the number of oral arguments presented, but the court removes those schedules from its website after each session, and the clerk's office does not maintain an archive of them. See *Scheduled Cases*, U.S. CT. APPEALS FOR FED. CIR., <http://www.cafc.uscourts.gov/scheduled-cases> [<https://perma.cc/5YN5-8UKE>]; Email from Jarrett B. Perlow, Chief Deputy Clerk, U.S. Court of Appeals for the Federal Circuit, to Paul R. Gugliuzza, Prof. of L., Temple Univ. Beasley Sch. of L. (May 24, 2021) (on file with the North Carolina Law Review).

the absence of women presenting oral argument at the Supreme Court more generally. Two studies have found that, from the 2008 through 2019 Terms, the percentage of advocates who were male exceeded 80% in every Term except two (2016 and 2018, in which the figures dipped to 79.6% and 79.0%, respectively).<sup>100</sup> In fact, in the Court's 2019 Term (which concluded in 2020), the percentage of women lawyers presenting argument was only 12.6%—the lowest level since 2008.<sup>101</sup> In raw numbers, only 13 of the 103 lawyers who presented at least one oral argument in the 2019 Term were women.

Remarkably, those studies understate matters because lawyers who presented more than one argument in a Term were counted only once, and lawyers who present multiple arguments in a Term tend to be male. Our data, by contrast, counts individual argument *appearances*, so a lawyer who presents, say, five arguments in a Term is counted five times. This approach, we believe, provides a better sense of the actual gender composition of the bar.

Our data indicate that, from the 2010 through 2019 Terms, 83.4% of oral arguments at the Supreme Court were presented by male attorneys; only 16.6% were presented by women attorneys.

Figure 1. Lawyers Arguing Supreme Court Cases, OT2010 Through OT2019

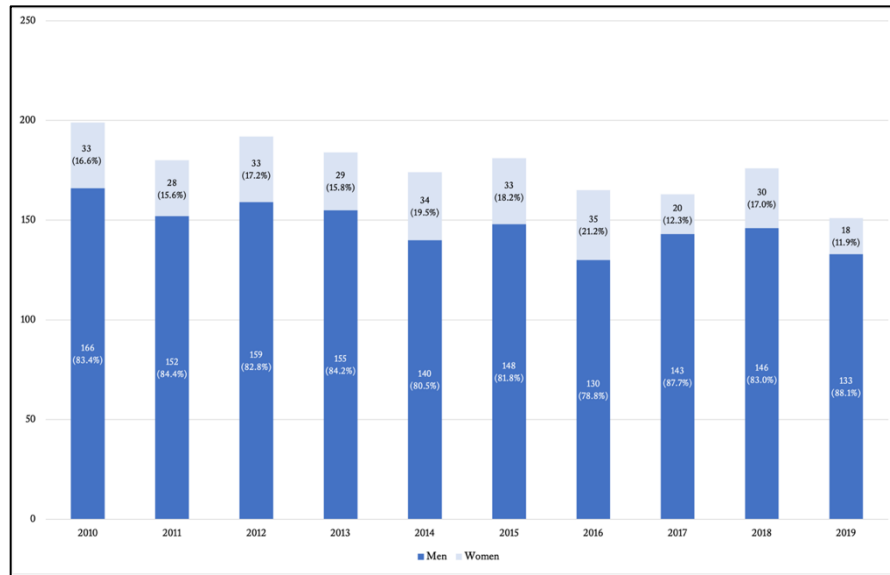


100. Jimmy Hoover, Amanda James & Annie Pancak, *Making Her Case: Will the Future of the Supreme Court Bar Be Female?*, LAW360 (Oct. 2, 2018), <https://www.law360.com/articles/1087277> [<https://perma.cc/3KWR-36AQ> (staff-uploaded, dark archive)]; Natalie Rodriguez, *Why Can't Female Lawyers Make Headway at the High Court?*, LAW360 (July 14, 2020, 2:05 PM), <https://www.law360.com/appellate/articles/1288521/why-can-t-female-lawyers-make-headway-at-the-high-court> [<https://perma.cc/8DF2-CG9J> (staff-uploaded, dark archive)].

101. Rodriguez, *supra* note 100.

Though the numbers are not large, the proportion of women advocates appears to be trending downward. As Figure 2 below shows, from 2014 through 2016, the proportion of oral arguments presented by women reached nearly 20% (102 of 520). But, from 2017 through 2019, that figure shrank to less than 14% (68 of 490), a difference that is statistically significant at the 5% level ( $p = .012$ ).<sup>102</sup>

Figure 2. Lawyers Arguing Supreme Court Cases Year-by-Year, OT2010 Through OT2019



Prior research has observed that a large portion of the women presenting oral argument at the Supreme Court work for the government, primarily in the Office of the Solicitor General.<sup>103</sup> The data collected for this study likewise illustrate how rarely a woman attorney presents argument on behalf of a client other than the federal government. As Figure 3 below shows, once lawyers from the Office of the Solicitor General<sup>104</sup> are excluded from the dataset, the

102. Because the data presented throughout this Article includes the entire population of relevant arguments during the time periods of interest, the results are statistically significant by definition. Nevertheless, to provide a sense of the importance of observed differences, the article reports  $p$ -values at several points, based on the assumption that the data is a sample of a larger population. Unless otherwise indicated,  $p$ -values were calculated using Microsoft Excel to perform a two-tail t-test assuming unequal variances.

103. See Hoover et al., *supra* note 100 (reporting that, in the 2017 Term “five out of 16 women who argued before the court hailed from the solicitor general’s office, compared to seven out of 21 in 2016 and eight out of 20 in 2015”).

104. The Office of the Solicitor General handles all Supreme Court litigation on behalf of the federal government. See 28 U.S.C. § 518(a). The Office consists of the Solicitor General, four Deputy

proportion of oral arguments presented by women attorneys drops from 16.6% to 12.3%. Another way of putting it is that, of the 293 Supreme Court oral arguments presented by women attorneys from 2010 through 2019, nearly half (143, or 48.8%) were presented by attorneys from the Solicitor General's office.

Figure 3. Lawyers Arguing Supreme Court Cases, SG Lawyers Excluded, OT2010 Through OT2019

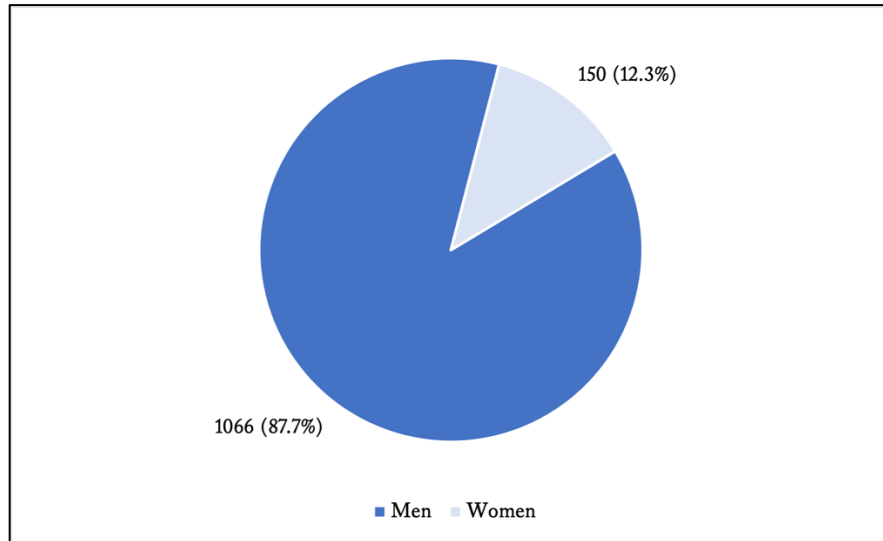
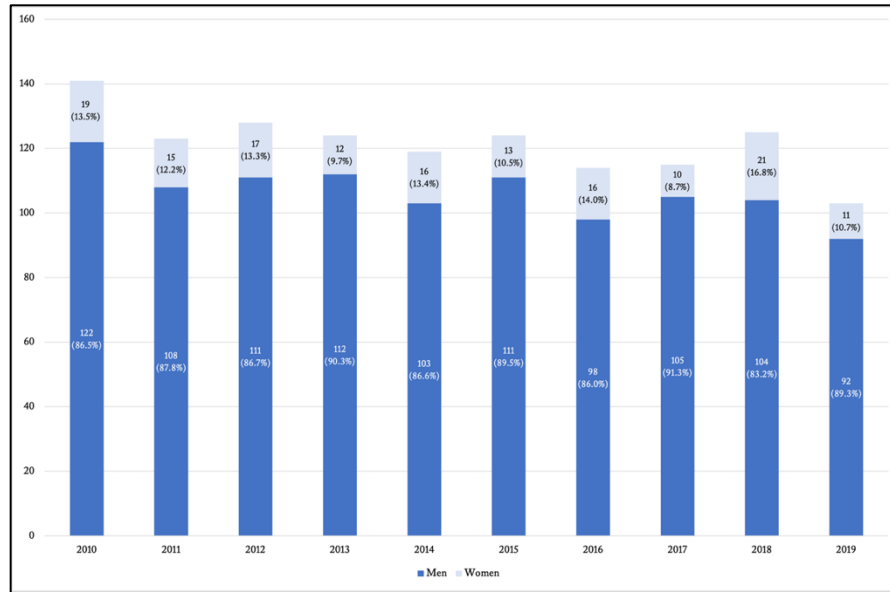


Figure 4 below presents the same data as Figure 3, with the numbers broken out by year to show the gender divide among lawyers who do not work for the Office of the Solicitor General. Of those lawyers, the proportion of women presenting argument has remained relatively steady over the past decade, ranging from a low of 8.7% in 2017 to a high of 16.8% the very next Term.

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Solicitors General (three of whom are career attorneys in the Department of Justice, the fourth of whom, the Principal Deputy, typically leaves at the end of a presidential administration), and over a dozen Assistants to the Solicitor General. See *Employment Opportunities*, U.S. DEP'T JUST., <https://www.justice.gov/osg/employment-opportunities> [<https://perma.cc/BRY7-BEH6>] (last updated Feb. 17, 2022).

Figure 4. Lawyers Arguing Supreme Court Cases, SG Lawyers Excluded, Year-by-Year OT2010 Through OT2019



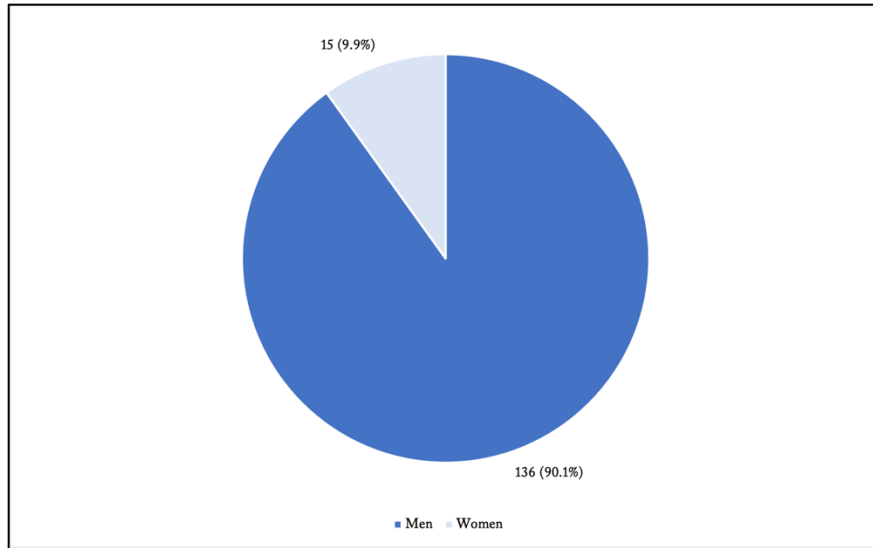
The gender inequalities in Supreme Court representation overall appear—and, indeed, are magnified—in patent cases. As many scholars have documented, the Supreme Court, after mostly ignoring patent law in the latter half of the twentieth century, has heard a large number of patent cases over the past twenty years.<sup>105</sup> (Forty-six since 2005, as compared to fourteen in the preceding two decades.)<sup>106</sup> Accordingly, a supplemental dataset developed for this Article covers all patent cases the Supreme Court decided from the 1992 through 2019 Terms and codes the oral arguments for gender along the lines described above.

Out of 151 argument appearances in Supreme Court patent cases in that dataset, 136, or 90.1%, were by men, as illustrated in Figure 5 below.

105. See, e.g., John F. Duffy, *The Festo Decision and the Return of the Supreme Court to the Bar of Patents*, 2002 SUP. CT. REV. 273, 275; John M. Golden, *The Supreme Court As “Prime Percolator”: A Prescription for Appellate Review of Questions in Patent Law*, 56 UCLA L. REV. 657, 658–59 (2009); Peter Lee, *The Supreme Assimilation of Patent Law*, 114 MICH. L. REV. 1413, 1416 (2016).

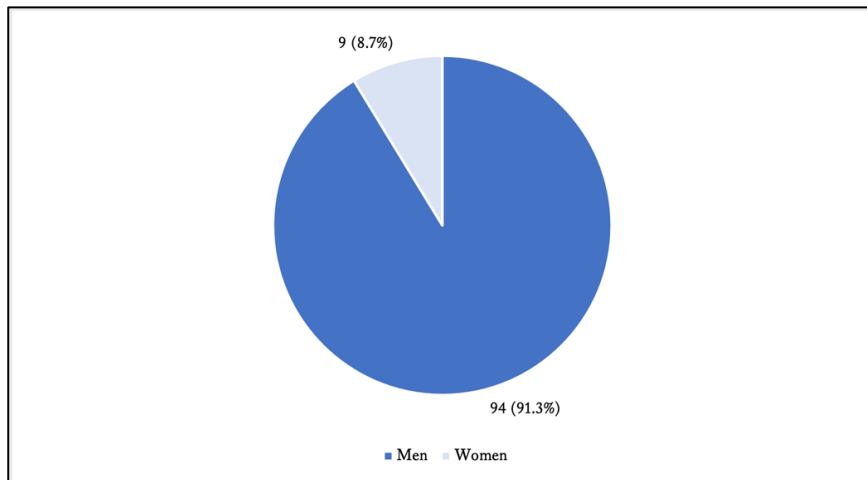
106. For a regularly updated list of Supreme Court patent cases, see Lisa Larrimore Ouellette, Michael Risch & Camilla Hrdy, *Supreme Court Patent Cases*, WRITTEN DESCRIPTION, <https://writtendescription.blogspot.com/p/patents-scotus.html> [<https://perma.cc/ZJ6F-522L>].

Figure 5. Lawyers Arguing Supreme Court Patent Cases, OT1992 Through OT2019



Excluding government lawyers pushes that percentage even higher. As Figure 6 below indicates, 91.3% of the lawyers representing private parties in patent cases before the Supreme Court were men.

Figure 6. Lawyers Arguing Supreme Court Patent Cases, SG Lawyers Excluded, OT1992 Through OT2019



Limiting the data to 2010 through 2019 (similar to the overall Supreme Court data reported above), does not change the results much. From 2010 through 2019, 90.1% of oral arguments in Supreme Court patent cases were

presented by men (82 of 91). Excluding government lawyers, that figure rises to 94.5% (69 of 73).

B. *Federal Circuit*

Patent cases, as noted, have become a much larger portion of the Supreme Court's docket over the past decade.<sup>107</sup> But those cases still represent only a sliver of U.S. patent litigation. Far more patent litigation occurs at the U.S. Court of Appeals for the Federal Circuit, which hears all appeals nationwide in cases "arising under" patent law.<sup>108</sup> This section of the Article first discusses the composition of the Federal Circuit itself, then analyzes the gender balance among the advocates who appear before it.

1. Composition of the Court

The gender balance among the judges on the Federal Circuit is relatively even. Of the court's twelve active judges, seven are men and five are women, including the current chief judge, Kimberly Moore, and the immediately prior chief judge, Sharon Prost, whose term ended in May 2021. The July 2021 confirmation of Judge Tiffany Cunningham to replace Judge Evan Wallach brought the court's bench into gender parity until the March 2022 confirmation of Judge Leonard Stark to replace Judge Kathleen O'Malley.<sup>109</sup> Figure 7 below depicts the gender breakdown of the Federal Circuit's active judges over the time period of this Article's empirical study, 2010 through 2019.<sup>110</sup>

107. From 1982 until 2011, the Supreme Court decided, on average, less than one patent case per Term. Since 2010, however, the Court has decided about 3.5 patent cases per Term. See Gugliuzza, *Supreme Court Bar*, *supra* note 8, at 1244–45.

108. 28 U.S.C. § 1295(a)(1). For more details on the Federal Circuit's jurisdiction over patent cases, see Paul R. Gugliuzza, *Rising Confusion over "Arising Under" Jurisdiction in Patent Cases*, 69 EMORY L.J. 459, 469–77 (2019).

109. See Jacob Owens, *Delaware Judge Stark Appointed to Federal Circuit*, DEL. BUS. TIMES (Feb. 10, 2022), <https://delawarebusinesstimes.com/news/stark-appointed-to-fed-circuit> [https://perma.cc/BB76-HCBZ].

110. For simplicity, the list of judges for each year includes the judges in active status as of January 1 of that year. The judges are listed in order of seniority, with the chief judge listed first. Blank cells indicate vacant seats.



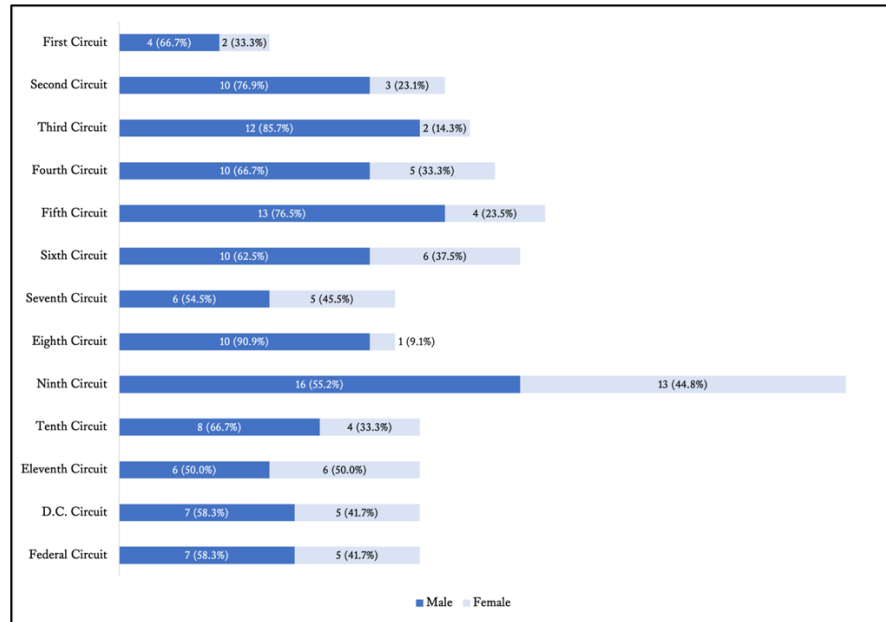
Figure 7. Active Judges of the Federal Circuit

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Michel (C)	Rader (C)	Rader (C)	Rader (C)	Rader (C)	Prost (C)	Prost (C)	Prost (C)	Prost (C)	Prost (C)
Newman	Newman	Newman	Newman	Newman	Newman	Newman	Newman	Newman	Newman
Mayer	Lourie	Lourie	Lourie	Lourie	Lourie	Lourie	Lourie	Lourie	Lourie
Lourie	Bryson	Bryson	Bryson	Dyk	Dyk	Dyk	Dyk	Dyk	Dyk
Rader	Gajarsa	Linn	Dyk	Prost	Moore	Moore	Moore	Moore	Moore
Bryson	Linn	Dyk	Prost	Moore	O'Malley	O'Malley	O'Malley	O'Malley	O'Malley
Gajarsa	Dyk	Prost	Moore	O'Malley	Reyna	Reyna	Reyna	Reyna	Reyna
Linn	Prost	Moore	O'Malley	Reyna	Wallach	Wallach	Wallach	Wallach	Wallach
Dyk	Moore	O'Malley	Reyna	Wallach	Taranto	Taranto	Taranto	Taranto	Taranto
Prost	O'Malley	Reyna	Wallach	Tranto	Chen	Chen	Chen	Chen	Chen
Moore		Wallach		Chen	Hughes	Hughes	Hughes	Hughes	Hughes
				Hughes		Stoll	Stoll	Stoll	Stoll

Female Male

The Federal Circuit is one of the most gender balanced federal courts of appeals in the country. Overall, as of July 2020, 33.9% of the active judges on the federal courts of appeals (61 of 180) were women.<sup>111</sup> As the figure below shows, only the Seventh, Ninth, Eleventh, D.C., and Federal Circuits had a proportion of women active judges that exceeded 40%.

Figure 8. Gender Balance on the Federal Courts of Appeals (as of July 1, 2020)



111. See *infra* Figure 8.

Interestingly, given the stereotype that patent lawyers come from male-dominated science and engineering fields,<sup>112</sup> four of the Federal Circuit's five active women judges had pre-appointment experience in patent law.<sup>113</sup> Before being appointed in 1984, Judge Pauline Newman, who has a Ph.D. in chemistry, spent thirty years working at FMC Corporation, serving as a patent attorney, in-house counsel, and, ultimately, director of the patent, trademark, and licensing department.<sup>114</sup> Chief Judge Moore, who has a master's degree from the Massachusetts Institute of Technology, clerked on the Federal Circuit and spent a decade as a law professor focusing on patent law.<sup>115</sup> Judge Kara Stoll served as a patent examiner before law school, clerked on the Federal Circuit after law school, and practiced for seventeen years at the patent-focused law firm, Finnegan, Henderson, Farabow, Garrett & Dunner.<sup>116</sup> Judge Cunningham also clerked on the Federal Circuit and spent nearly twenty years in private practice as a patent litigator.<sup>117</sup>

By contrast, the court's male judges had less pre-appointment experience with patent law. Judges Alan Lourie and Ray Chen are the only judges with deep patent backgrounds.<sup>118</sup> Judges Timothy Dyk and Richard Taranto handled some patent cases as part of wider-ranging appellate litigation practices.<sup>119</sup> And Judges Jimmie Reyna, Todd Hughes, and Evan Wallach (who assumed senior

112. See *supra* notes 4–9 and accompanying text.

113. For biographical information about the Federal Circuit's judges, see *Judge Biographies*, U.S. CT. APPEALS FOR FED. CIR. (Apr. 29, 2022, 1:20 PM), <https://cafc.uscourts.gov/home/the-court/judges/judge-biographies/> [<https://perma.cc/MBP7-8QFV>].

114. *Id.*

115. See, e.g., Kimberly A. Moore, *Populism and Patents*, 82 N.Y.U. L. REV. 69 (2007); Kimberly A. Moore, *Judges, Juries, and Patent Cases—An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365 (2000).

116. U.S. CT. APPEALS FOR FED. CIR., *supra* note 113.

117. See Britain Eakin, *Biden Fed. Cir. Nominee Calls Judgeship 'Dream Job'*, LAW360 (May 26, 2021, 5:02 PM), <https://www.law360.com/articles/1387866> [<https://perma.cc/92ZD-9FQX> (staff-uploaded, dark archive)]. Similarly, the recently retired Judge O'Malley, before she was appointed to the Federal Circuit, served as a federal district judge in the Northern District of Ohio, where she was well-known for handling patent cases and was respected as a commentator about patent litigation from the district judge's perspective. See, e.g., Kathleen M. O'Malley, Patti Saris & Ronald H. Whyte, *A Panel Discussion: Claim Construction from the Perspective of the District Judge*, 54 CASE W. RES. L. REV. 671, 671–72 (2004). Judge O'Malley also gave lie to the notion that a hard science background is essential to developing expertise in patent law—she majored in history and economics at Kenyon College. Jeff Grabmeier, *Judge O'Malley Presiding*, KENYON COLL. ALUMNI BULL. (2012), <http://bulletin-archive.kenyon.edu/x3958.html> [<https://perma.cc/F6B7-3DC6>].

118. See U.S. CT. APPEALS FOR FED. CIR., *supra* note 113. Judge Lourie, after graduating from Temple Law School, practiced patent law in the pharmaceutical industry, ultimately serving as associate general counsel and vice president for patents and trademarks at SmithKline Beecham Corp. *Id.* Judge Chen worked as a technical assistant at the Federal Circuit and then spent fifteen years in the Office of the Solicitor at the PTO. *Id.*

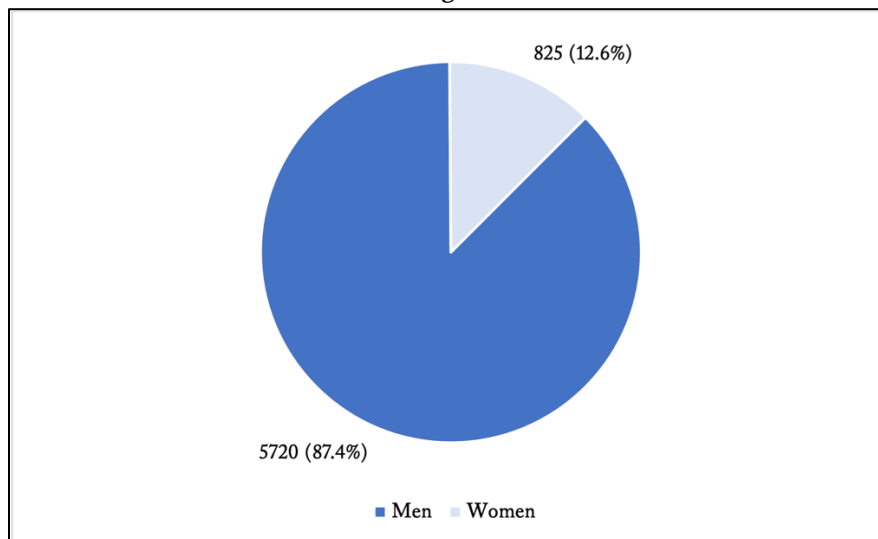
119. For notable patent matters handled by each of them, see *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 20 (1997) (Taranto); *Exxon Chem. Pats., Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1554 (Fed. Cir. 1995) (Dyk).

status in May 2021, after our empirical study concluded) practiced in other areas of law within the Federal Circuit's exclusive jurisdiction.<sup>120</sup>

## 2. Federal Circuit Advocates

Though the court itself is relatively gender balanced, the bar that appears before it in patent cases is not. As Figure 9 below illustrates, from 2010 to 2019, roughly 6,500 oral arguments were presented to the Federal Circuit in patent cases. Over 5,700 of them (87.4%) were by male lawyers.

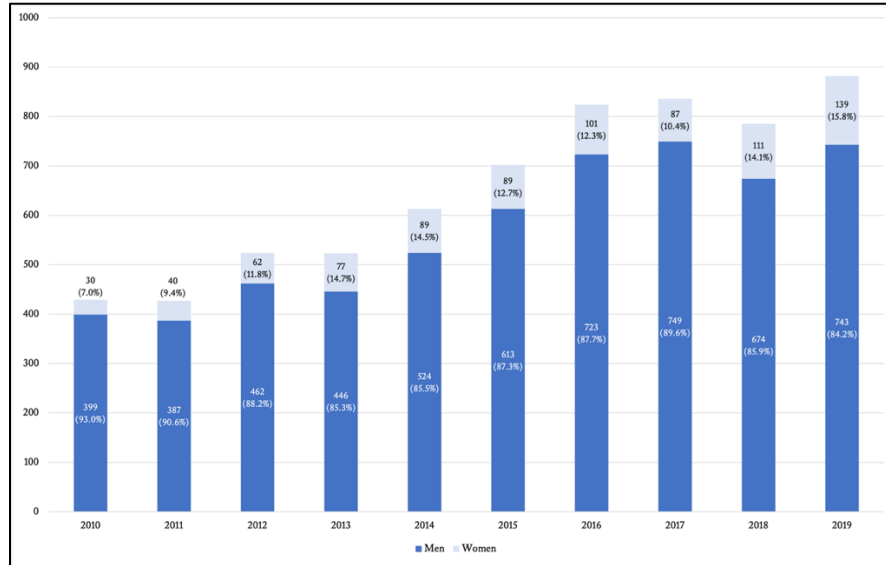
Figure 9. Federal Circuit Oral Arguments in Patent Cases, 2010 Through 2019



When you look at trends, the picture improves somewhat. As Figure 10 illustrates, the proportion of women presenting oral argument at the Federal Circuit, though small, has more than doubled in the past decade, increasing from 7.0% in 2010 to 15.8% in 2019.

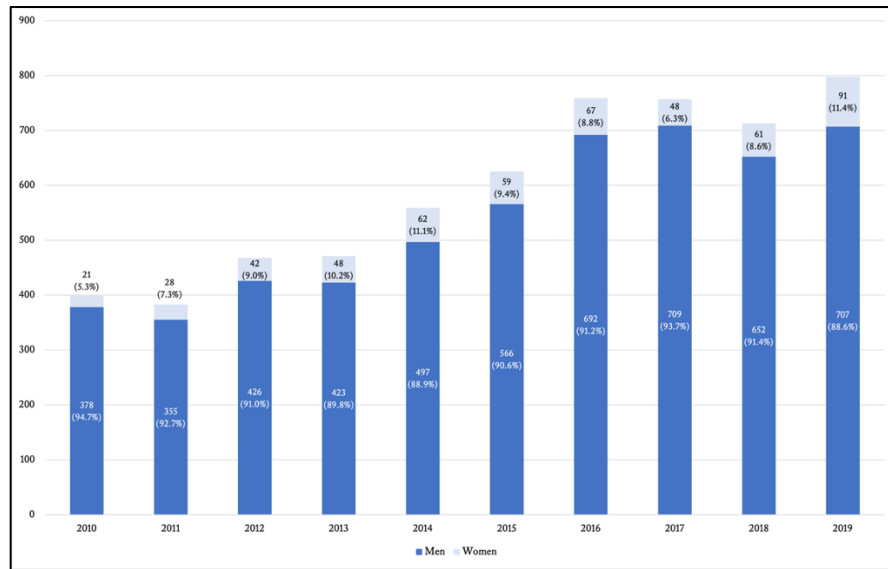
120. U.S. CT. APPEALS FOR FED. CIR., *supra* note 113 (international trade for Judges Reyna and Wallach, government litigation for Judge Hughes).

Figure 10. Federal Circuit Oral Arguments in Patent Cases Year-by-Year, 2010 Through 2019



The increase in women lawyers, as Figure 11 below shows, is largely not from the private sector. That figure, like Figure 10 above, shows the year-by-year gender breakdown of lawyers arguing patent cases at the Federal Circuit but it limits the data to lawyers from the private sector only; lawyers who appear on behalf of the government are excluded.

Figure 11. Federal Circuit Oral Arguments in Patent Cases Year-by-Year, Private Sector Lawyers Only, 2010 Through 2019



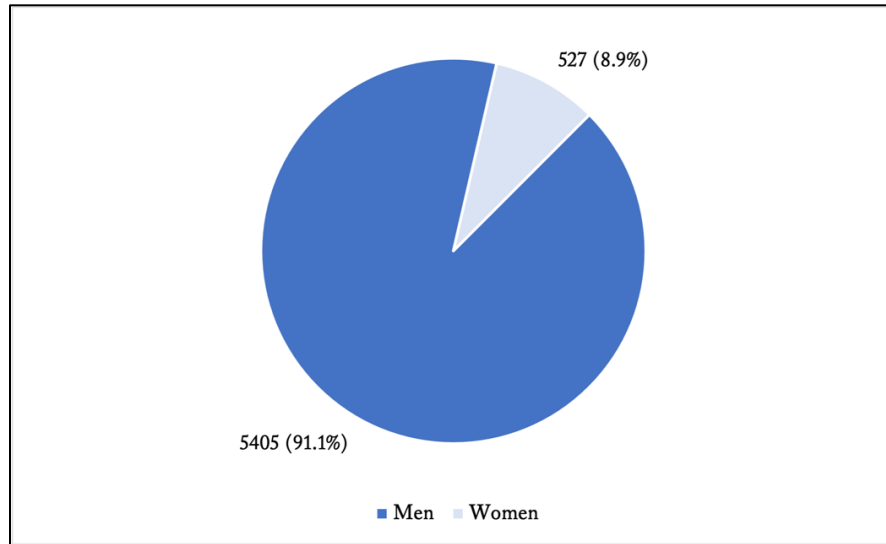
As Figure 11 illustrates, the proportion of arguments presented by women lawyers from the private sector has increased over the past decade, but not as much as the overall numbers. From the first three years of this Article's study (2010 through 2012) to the last three years (2017 through 2019), the proportion of women advocates overall increased by 40.8%.<sup>121</sup> But the increase for the private sector was only 21.1%.<sup>122</sup>

A higher-level analysis tells the story more clearly. As discussed above, 12.6% of Federal Circuit patent case oral arguments were presented by women attorneys from 2010 through 2019. When limited to private-sector attorneys, that figure drops to 8.9%, as Figure 12 below indicates. This difference is statistically significant at the 1% level ( $p < .001$ ).

121. As one can calculate from Figure 10, overall, 9.6% of arguments were presented by women from 2010 through 2012; that percentage increased to 13.5% from 2017 through 2019.

122. In the private sector, 7.3% of arguments were presented by women from 2010 through 2012; that percentage increased to 8.8% from 2017 through 2019.

Figure 12. Federal Circuit Oral Arguments in Patent Cases, Private Sector Lawyers Only, 2010 Through 2019



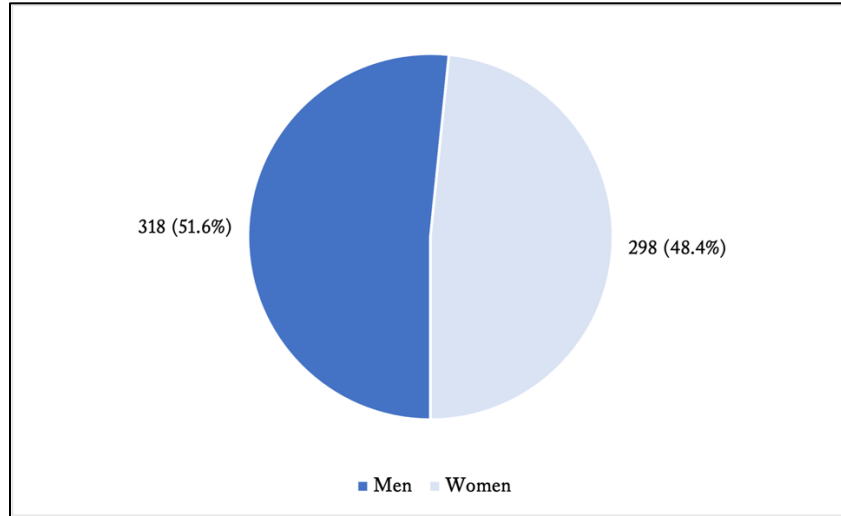
Put differently, of the 825 arguments in the dataset presented by women, 298 (or 36.1%) were by government attorneys.<sup>123</sup> The low overall numbers of women arguing patent cases at the Federal Circuit (as reported in Figures 9 and 10 above) obscure the fact that, in certain areas of patent law practice, women frequently deliver appellate oral arguments.

### 3. Government Lawyers

When we focus on government lawyers, the composition of the Federal Circuit patent bar looks much different. As Figure 13 below shows, women and men presented oral argument on behalf of the government in patent cases in roughly equal proportion from 2010 through 2019: 48.4% women and 51.6% men.

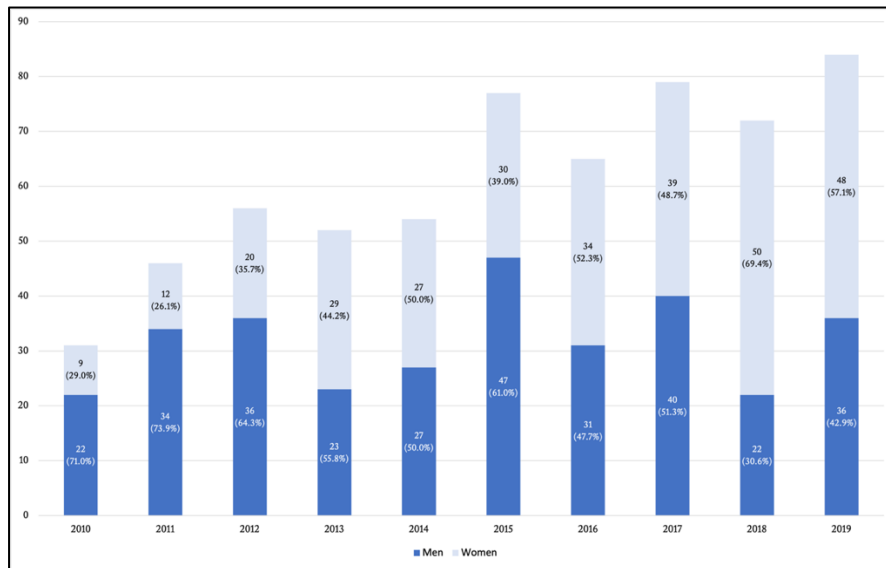
123. The numbers for 2020 appear similar. An analysis by Perry Cooper found that, over the first six months of the year, less than 20% of the attorneys arguing at the Federal Circuit were women and that 48 of the 100 women who argued represented the federal government. Perry Cooper, *Women Lawyers Find Arguing Patent Appeals 'Strange and Lonely'*, BLOOMBERG L. (May 27, 2020, 6:00 AM), <https://news.bloomberglaw.com/ip-law/women-lawyers-find-arguing-patent-appeals-strange-and-lonely> [<https://perma.cc/HF85-C33D> (staff-uploaded, dark archive)].

**Figure 13. Federal Circuit Oral Arguments in Patent Cases, Government Lawyers Only, 2010 Through 2019**



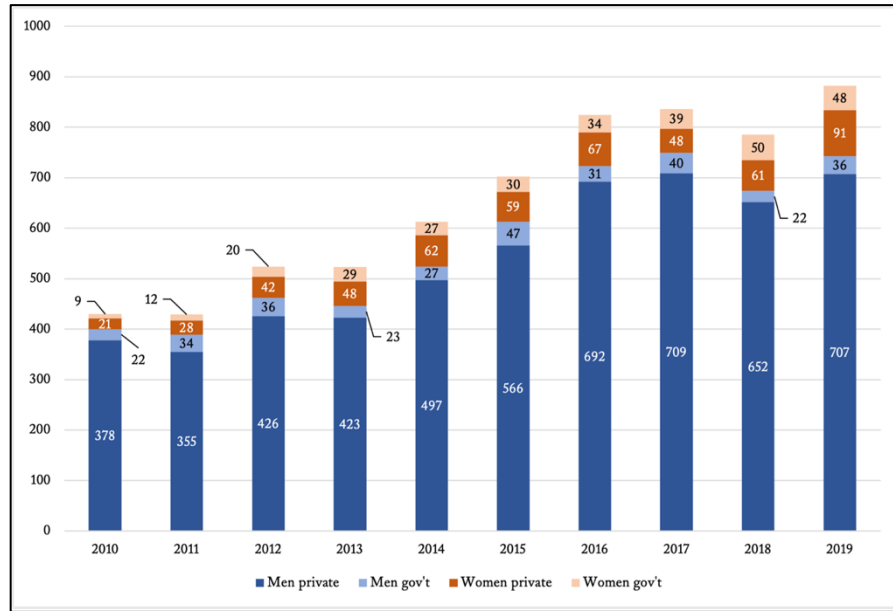
And the trend in the proportion of women presenting oral argument on behalf of the government is plainly upwards. As Figure 14 below illustrates, it has increased from roughly a quarter to a third in the early 2010s to well over 60% in 2018 and 2019 combined.

**Figure 14. Federal Circuit Oral Arguments in Patent Cases, Government Lawyers Only, 2010 Through 2019**



This data indicates that the increasing proportion of women arguing patent cases at the Federal Circuit, as reported in Figure 10 above, is due largely to an increase of women arguing patent cases *on behalf of the federal government*. The next figure visualizes that growth by separating the numbers for (1) male private-sector lawyers, (2) male government lawyers, (3) women private sector lawyers, and (4) women government lawyers. The Federal Circuit's bar remains overwhelmingly male, but the growing presence of women—particularly appearing on behalf of the government—is clear. For instance, during the first year of our study (2010), only thirty women presented oral argument in Federal Circuit patent cases; nine did so on behalf of the government and twenty-one did so on behalf of private sector clients. By contrast, during the last year of our study (2019), 139 women presented oral argument in Federal Circuit patent cases; forty-eight did so on behalf of the government (a more than five-fold increase from 2010) and ninety-one did so on behalf of private sector clients (a more than four-fold increase from 2010).<sup>124</sup>

Figure 15. Federal Circuit Oral Arguments in Patent Cases Year-by-Year, 2010 Through 2019



Government lawyers arguing patent cases at the Federal Circuit come mainly from the Office of the Solicitor at the PTO. The Solicitor's Office serves

124. It is worth noting that the number of women arguing on behalf of private sector clients in 2019 was unusually large. Before that year, the largest number had been sixty-seven in 2016.



as the PTO's legal counsel on matters of intellectual property law.<sup>125</sup> One of the Solicitor's Office's most significant responsibilities is defending the PTO's decisions in patent examination or in post-issuance review of patent validity when those decisions are challenged in court—typically at the Federal Circuit.<sup>126</sup>

Since 2013, the number of PTO decisions being challenged in court has dramatically increased.<sup>127</sup> Some background is necessary to understand why that is so and how it relates to gender equality in appellate patent litigation. It has always been possible for an inventor whose patent application was rejected to seek judicial review of the PTO's decision; today, that usually happens through an appeal to the Federal Circuit.<sup>128</sup> Since the 1980s, the PTO has also conducted several different proceedings through which the agency can reconsider the validity of patents it has already issued.<sup>129</sup> Appeals in those post-issuance proceedings also go to the Federal Circuit.<sup>130</sup> In 2011, Congress, as part of the America Invents Act ("AIA"),<sup>131</sup> created three new proceedings for reviewing the validity of issued patents. These new proceedings, which are usually initiated by companies that have been sued for patent infringement, have proved far more popular than any of their predecessors and have revolutionized the practice of patent litigation.<sup>132</sup> Today, patent litigation in federal court is often stayed so the PTO can first reconsider the patent's validity, and the PTO's decision on validity often resolves the dispute altogether.<sup>133</sup>

125. See *Office of the General Counsel*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/about-us/organizational-offices/office-general-counsel> [https://perma.cc/G2LV-MMZY].

126. See *Office of the Solicitor*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/about-us/organizational-offices/office-general-counsel/office-solicitor> [https://perma.cc/7FYV-9V59].

127. See Jason Rantanen, *Federal Circuit Dataset & Stats: 2021 Update*, PATENTLYO (Jan. 10, 2022), <https://patentlyo.com/patent/2022/01/federal-circuit-statistics-package.html> [https://perma.cc/39S3-E7QH].

128. See 28 U.S.C. § 1295(a)(4)(A).

129. See, e.g., 35 U.S.C. §§ 301–07 (ex parte reexamination).

130. See 35 U.S.C. § 141(b).

131. America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (codified in scattered sections of 35 U.S.C.).

132. For an overview of the new proceedings and their uses, see Paul R. Gugliuzza, *(In)valid Patents*, 92 NOTRE DAME L. REV. 271, 278–87 (2016). The popularity of the new proceedings stems mainly from their speed (by statute, they must conclude within a year of the PTO instituting review, 35 U.S.C. § 316(a)(11)) and from the success challengers have had (patentees have invalidated the challenged patent, in whole or in part, in about three-quarters of instituted proceedings that ended in a final decision). See PAT. TRIAL & APPEAL BD., U.S. PAT. & TRADEMARK OFF., PTAB TRIAL STATISTICS: FY21 END OF YEAR OUTCOME ROUNDUP: IPR, PGR, CBM 11–12 (2021), [https://www.uspto.gov/sites/default/files/documents/ptab\\_aia\\_fy2021\\_roundup.pdf](https://www.uspto.gov/sites/default/files/documents/ptab_aia_fy2021_roundup.pdf) [https://perma.cc/WKE3-8TD5].

133. See Saurabh Vishnubhakat, Arti K. Rai & Jay P. Kesan, *Strategic Decision Making in Dual PTAB and District Court Proceedings*, 31 BERKELEY TECH. L.J. 45, 49–50 (2016).

The most widely used of the new PTO proceedings is called inter partes review.<sup>134</sup> That proceeding permits the challenger (again, usually a defendant in a pending infringement suit) to argue that a patent is invalid because it lacks novelty or is obvious based on documentary prior art (namely, prior patents and publications).<sup>135</sup> Since its inauguration in 2013, the Patent Trial and Appeal Board, which conducts the new AIA proceedings, has received over 10,000 petitions for inter partes review, instituted review on over half of them,<sup>136</sup> and held at least some claims unpatentable in roughly 80% of its final decisions.<sup>137</sup>

That means *a lot* of appeals from the PTAB to the Federal Circuit. Though the post-issuance review proceedings at the PTAB are, nominally, between the challenger (that is, the alleged infringer) and the patentee, the PTO is, by statute, given a right to intervene in any appeal to the Federal Circuit,<sup>138</sup> and it exercises that right regularly.<sup>139</sup>

As Figure 16 below shows, as recently as 2014, the Federal Circuit decided only sixty-seven appeals in PTO patent cases—a fraction of the 239 district court appeals (which consist almost entirely of patent infringement suits and suits seeking declaratory judgments of patent invalidity or noninfringement) it decided that year. By 2019—a mere five years later—the number of Federal Circuit decisions in PTO patent appeals (241) was 3.5 times greater than it was in 2014, and it exceeded the number of Federal Circuit decisions in district court cases (182) by a large margin.<sup>140</sup> Today, more than half of the Federal Circuit's patent decisions come in appeals from the PTO—far different than just five years earlier, when PTO appeals comprised barely 20% of the court's patent docket.<sup>141</sup>

134. Anderson & Gugliuzza, *supra* note 51, at 460.

135. See 35 U.S.C. § 311(a).

136. Under the AIA, the PTAB can institute inter partes review if it finds there is a “reasonable likelihood” the petitioner will establish that at least one of the challenged patent claims is invalid. 35 U.S.C. § 314(a).

137. See PAT. TRIAL & APPEAL BD., U.S. PAT. & TRADEMARK OFF., TRIAL STATISTICS: IPR, PGR, CBM (2019), [https://www.uspto.gov/sites/default/files/documents/Trial\\_Statistics\\_2019-10-31.pdf](https://www.uspto.gov/sites/default/files/documents/Trial_Statistics_2019-10-31.pdf) [<https://perma.cc/E3NQ-DPJY>]. For slightly more up-to-date numbers—though reported in a different format—see PAT. TRIAL & APPEAL BD., U.S. PAT. & TRADEMARK OFF., *supra* note 132, at 11–12.

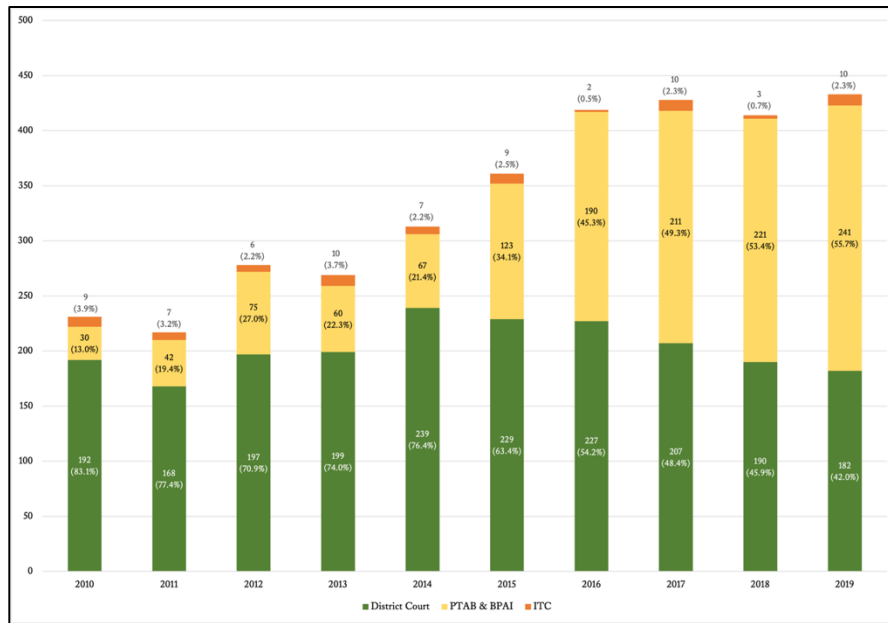
138. 35 U.S.C. § 143.

139. Saurabh Vishnubhakat, *When Can the Patent Office Intervene in Its Own Cases?*, 73 N.Y.U. ANN. SURV. AM. L. 201, 241 (2018) (noting that the PTO intervened in 145 Federal Circuit appeals from December 2013 through September 2017).

140. Figure 16 combines the decisions of the PTAB and its predecessor, the Board of Patent Appeals and Interferences (“BPAI”). The America Invents Act eliminated the BPAI when it created PTAB. America Invents Act, Pub. L. No. 112-29, § 3, 125 Stat. 284, 290 (2011) (codified in scattered sections of 35 U.S.C.).

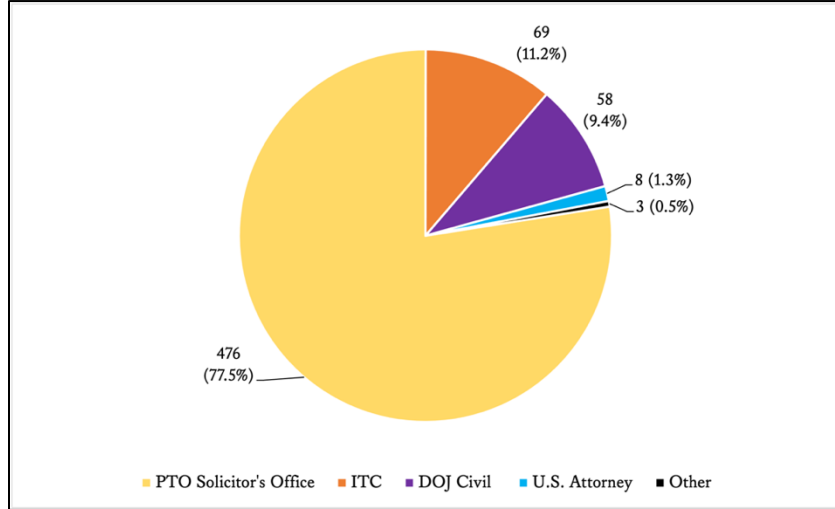
141. Figure 16 also shows the small number of patent cases that come to the Federal Circuit from the U.S. International Trade Commission (“ITC”), which has the authority to prohibit the importation of products that infringe U.S. patents. See 19 U.S.C. § 1337(a)(1)(B). For background on patent

Figure 16. Origin of Federal Circuit Decisions, 2010 Through 2019



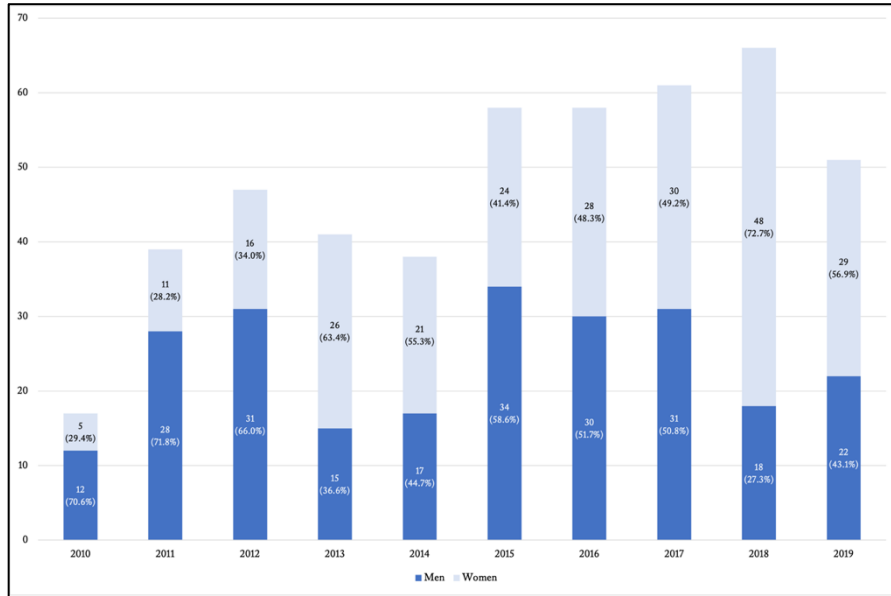
Accordingly, more and more Federal Circuit cases are being argued by lawyers from the PTO Solicitor's Office, defending the PTAB's decisions. Figure 17 below shows the organizational affiliation of the government lawyers arguing patent cases over the ten years covered by our study. They are overwhelmingly from the Solicitor's Office.

Figure 17. Organizational Affiliation of Lawyers Arguing Federal Circuit Patent Cases on Behalf of the Government, 2010 Through 2019



And the lawyers presenting argument on behalf of the Solicitor's Office are, increasingly, women, as Figure 18 illustrates.

Figure 18. Federal Circuit Oral Arguments by the PTO Solicitor's Office, 2010 Through 2019

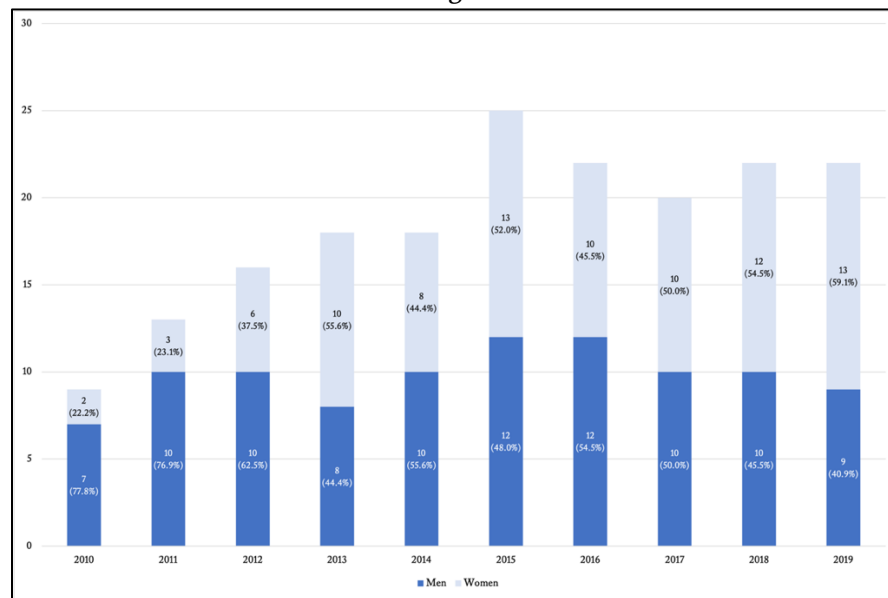


Since 2013, the proportion of women presenting oral argument on behalf of the PTO has exceeded 50% several times. Indeed, over the entire time period

of this study, precisely half of arguments presented by the PTO Solicitor's Office were by women: 238 of 476.

As Figure 19 below illustrates, roughly the same goes for the number of *lawyers* from the Solicitor's Office who presented at least one Federal Circuit argument in the years covered by this study. Though the number of male lawyers who presented an argument exceeded the number of women lawyers for the first few years, in 2013—the year the new AIA proceedings got under way—the ratio flipped. And the gender divide among lawyers at the Solicitor's Office has stayed roughly even ever since.

**Figure 19. Individual Lawyers from the PTO Solicitor's Office Who Presented at Least One Federal Circuit Oral Argument, 2010 Through 2019**



Congress enacted the AIA for many reasons: the new post-issuance review proceedings were designed to provide a fast and cheap alternative to court litigation over patent validity.<sup>142</sup> Its change of the priority rule<sup>143</sup> from first-to-invent to first-to-file-a-patent-application<sup>144</sup> harmonized U.S. law with that of most other countries.<sup>145</sup> Its limitation on the joinder of multiple, unrelated defendants in a single infringement lawsuit<sup>146</sup> was meant to thwart a tactic

142. H.R. REP. NO. 112-98, at 48 (2011).

143. Priority rules determine who gets a patent when two people invent the same thing around the same time. See Mark A. Lemley, *Ready for Patenting*, 96 B.U. L. REV. 1171, 1180–81 (2016).

144. See 35 U.S.C. § 102(a).

145. H.R. REP. NO. 112-98, *supra* note 142, at 40.

146. See 35 U.S.C. § 299.

avored by so-called patent trolls.<sup>147</sup> It was not intended to bring more women into appellate patent litigation.<sup>148</sup> But that is precisely what it did.

Since Congress passed the AIA ten years ago, the Black Lives Matter and #MeToo movements, among others, have made longstanding and deeply embedded racism and sexism plain to broader swaths of the public. The persistence of inequality and discrimination suggests that reforms in a purportedly apolitical area like patent law<sup>149</sup> must incorporate the advancement of diversity and inclusion.<sup>150</sup> Among the Biden Administration's first actions were issuing Executive Orders instructing federal agencies to vet policies and programs for race discrimination and discrimination based on gender identity.<sup>151</sup> The PTO Solicitor's Office might be highlighted as an example of how government agencies can cultivate equality at a faster pace than the private sector.<sup>152</sup>

What is it that enables the Solicitor's Office to have a roughly equal gender balance? It is well known that government positions can offer more work-life flexibility than positions in the private sector, and that flexibility surely plays some role.<sup>153</sup> But, based on our discussions with lawyers working in the field,

147. See Joe Matal, *A Guide to the Legislative History of the America Invents Act: Part II of II*, 21 FED. CIR. BAR J. 539, 592 (2012).

148. Although the Act did require the PTO director to “establish methods for studying the diversity of patent applicants, including those applicants who are minorities, women, or veterans.” America Invents Act, Pub. L. No. 112-29, § 29, 125 Stat. 284, 339 (2011).

149. For a modest challenge to the notion that patent law exists apart from politics, see Matthew Sag, Tonja Jacobi & Maxim Sytch, *Ideology and Exceptionalism in Intellectual Property: An Empirical Study*, 97 CALIF. L. REV. 801, 803–04 (2009) (finding that “although [political] ideology is highly predictive of IP outcomes, the size of this effect is . . . significantly lower than it is in cases involving prominent social issues, such as voting rights or the death penalty”).

150. For a recent, historical study shedding light on racism in the patent system—“an area of law and of the administrative state frequently considered outside politics”—see Kara W. Swanson, *Race and Selective Legal Memory: Reflections on Invention of a Slave*, 120 COLUM. L. REV. 1077, 1078–80 (2020) [hereinafter Swanson, *Race and Selective Legal Memory*], which discusses an 1858 opinion by the U.S. Attorney General stating that inventions by enslaved persons could not be patented because only citizens may obtain patents and, under *Dred Scott v. Sandford*, 60 U.S. 393 (1857), enslaved persons were not citizens. See generally Kara W. Swanson, *Patents, Politics, and Abortion*, in INTELLECTUAL PROPERTY LAW IN CONTEXT: LAW AND SOCIETY PERSPECTIVES ON IP (William T. Gallagher & Debora J. Halbert eds., 2017) (reviewing the history of patents on living organisms and arguing that the Patent Office has been remarkably successful at hiding the political implications of its work).

151. See Exec. Order No. 13988, 86 Fed. Reg. 7023 (Jan. 25, 2021); Exec. Order No. 13985, 86 Fed. Reg. 7009 (Jan. 25, 2021).

152. This, interestingly, would not be the first time the patent system played a role in bringing women into a space from which they had previously been excluded. See Kara W. Swanson, *Rubbing Elbows and Blowing Smoke: Gender, Class, and Science in the Nineteenth-Century Patent Office*, 108 ISIS: J. HIST. SCI. SOC'Y 40, 40 (2017) (discussing the “radical”—and failed—experiment of Charles Mason, Commissioner of Patents during the 1850s, to hire women “to work in the same spaces, at the same tasks, for the same salaries, as male clerks”).

153. See Teresa Lo, *The Pros and Cons of Working as a Government Attorney*, LAW CROSSING (Apr. 30, 2022), <https://www.lawcrossing.com/article/900049893/The-Pros-and-Cons-of-Working-as-a-Government-Attorney> [https://perma.cc/6MKZ-ZHJE (staff-uploaded, dark archive)].

we also think that the nature of the work and the culture of the workplace are hugely important in facilitating gender equality at the Solicitor's Office.

First, it bears emphasizing that positions at the Solicitor's Office are prestigious and sought-after—the lawyers' main responsibilities are litigating patent appeals at the Federal Circuit and working with the Solicitor General's Office on patent issues that are before the Supreme Court.<sup>154</sup> For a committed patent litigator, that is a desirable line of work. This allows the Office to be extremely selective about the lawyers it hires and to do so with an eye toward diversity if it chooses.

Second, and relatedly, the working culture at the Solicitor's Office contrasts with the private sector. At a law firm, an associate or even a junior partner might spend years writing briefs in Federal Circuit cases without presenting an oral argument. As our study indicates, those argument opportunities tend to go to the most senior, experienced, and predominantly male partners, regardless of who wrote the brief.<sup>155</sup> At the Solicitor's Office, however, if a lawyer writes a brief, they argue the case.<sup>156</sup> This not only makes the Solicitor Office's an attractive place to work, it means that the demographics of the lawyers presenting argument at the Federal Circuit are representative of the demographics of the Office as a whole. By contrast, private law firms, which have roughly equal numbers of men and women overall,<sup>157</sup> send male lawyers to argue at the Federal Circuit far more frequently because that choice is not necessarily based on brief authorship.<sup>158</sup>

#### 4. Repeat Advocates

Two final questions worth investigating involve the lawyers and litigants who appear before the Federal Circuit most frequently. In recent years, numerous law firms have formed practice groups focusing on appellate litigation

154. On the work of the PTO Solicitor's Office, see Megan M. La Belle, *Public Enforcement of Patent Law*, 96 B.U. L. REV. 1865, 1919 (2016).

155. See *infra* Section III.B.4 on the gender breakdown among the lawyers who most frequently present oral argument at the Federal Circuit. They are overwhelmingly men.

156. We know this from conversations with lawyers who have worked at the Solicitor's Office. For general discussions of the differences in stand-up opportunities afforded to government lawyers versus lawyers in private practice, see Shaheen Nouri, *Private Practice vs. Public Service: A Cost-Benefit Analysis*, ABA STUDENT LAW. (Jan. 15, 2018), <https://abaforlawstudents.com/2018/01/15/private-practice-vs-public-service-a-cost-benefit-analysis> [<https://perma.cc/6R2Z-A6QX>]; Katie Taylor, *BigLaw v. Public Service: Pros and Cons To Consider for Life After Law School*, NITRO (May 13, 2019), <https://www.nitrocollege.com/blog/big-law-v-public-service> [<https://perma.cc/66TV-7QBP>].

157. See *supra* notes 32–33.

158. Indeed, today, men and women enter law firm practice at roughly equal numbers. See NAT'L ASS'N OF WOMEN LAWS., NATIONAL ASSOCIATION OF WOMEN LAWYERS SURVEY ON THE PROMOTION AND RETENTION OF WOMEN IN LAW FIRMS 2 (2021), <https://www.nawl.org/page/nawl-survey> [<https://perma.cc/P5A5-3C4E> (staff-uploaded archive)] (click on the "here" hyperlink to download a PDF of the report). But, as our study shows, women are vastly underrepresented at the highest levels.

generally<sup>159</sup> and Federal Circuit litigation in particular.<sup>160</sup> Consequently, a handful of lawyers have presented a large portion of Federal Circuit patent arguments over the past decade. For example, though this study's dataset contains about 6,500 arguments, the ninety lawyers with ten or more arguments (3.2% of the 2,770 unique lawyers in the dataset) account for 1,453 arguments, or 22.2% of the total.

Those top Federal Circuit advocates are overwhelmingly men. Of the ninety lawyers who have ten or more arguments over the past decade, seventy-three (or 81.1%) are men.<sup>161</sup> Interestingly, women appear in the top ninety more frequently than they appear in the dataset overall. Overall, of the 2,770 lawyers in the dataset who have presented at least one argument, only 312 (11.3%) are women. But nearly 20% of the top ninety lawyers are women.

Women appear with disproportionate frequency among the lawyers who most often argue before the Federal Circuit because, perhaps not surprisingly by this point in the Article, they overwhelmingly work for the government. Of the seventeen women who cracked the top ninety, twelve work for the federal government, all in the PTO Solicitor's Office. Of the sixty-four private-sector lawyers in the top ninety Federal Circuit advocates overall, only five, or 7.8%, are women: Deanne Maynard,<sup>162</sup> Heidi Keefe,<sup>163</sup> Kathleen Sullivan,<sup>164</sup> Juanita Brooks,<sup>165</sup> and Meredith Addy.<sup>166</sup>

### 5. Repeat Litigants

Like lawyers, a handful of litigants appear with disproportionate frequency at the Federal Circuit. Many of those litigants are among the largest

159. See Richard J. Lazarus, *Advocacy Matters Before and Within the Supreme Court: Transforming the Court by Transforming the Bar*, 96 GEO. L.J. 1487, 1498 (2008).

160. See Paul R. Gugliuzza, *Pluralism on Appeal*, 100 GEO. L.J. ONLINE 36, 42 (2012).

161. Prior studies of oral arguments at the Supreme Court have similarly documented the overwhelming presence of male lawyers among the most frequent advocates. See Janet Roberts, Joan Biskupic & John Shiffman, *Special Report: In Ever-Clubbier Bar, Eight Men Emerge As Supreme Court Confidants*, REUTERS (Dec. 8, 2014, 5:57 AM), <https://www.reuters.com/article/us-scotus-advocates-specialreport/special-report-in-ever-clubbier-bar-eight-men-emerge-as-supreme-court-confidants-idUSKBN0JM11E20141208> [<https://perma.cc/JP8C-VBJV>] (“[A] group of eight lawyers, all men, accounted for almost 20 percent of all the arguments made before the court by attorneys in private practice during the past decade.”).

162. Deanne E. Maynard, MORRISON & FOERSTER, <https://www.mofo.com/people/deanne-maynard.html> [<https://perma.cc/28V8-EC34>].

163. Heidi Keefe, COOLEY LLP, <https://www.cooley.com/people/heidi-keefe> [<https://perma.cc/A3JH-5ZQW>].

164. Kathleen M. Sullivan, QUINN EMANUEL URQUHART & SULLIVAN LLP, <https://www.quinnemanuel.com/attorneys/sullivan-kathleen-m> [<https://perma.cc/X3L5-2QHL>].

165. Juanita Brooks, FISH & RICHARDSON, <https://www.fr.com/team/juanita-brooks> [<https://perma.cc/NHK2-VY8U>].

166. Meredith Martin Addy, ADDYHART P.C., <https://addyhart.com/atty-bio-meredith-addy> [<https://perma.cc/7X8N-TSRL>].



corporations in the world, so analyzing the gender breakdown of the lawyers they tap to argue patent appeals provides insight into gender balance at the highest levels of law practice more generally.

To prepare this analysis, we started with a list, generated through Docket Navigator,<sup>167</sup> of the parties most frequently accused of patent infringement in the federal district courts from 2010 through 2019.<sup>168</sup> The starting point was a list of alleged infringers because the list of patentees who litigate most frequently is dominated by nonpracticing entities, many of whom are in the business of seeking quick settlements and have little interest in litigating all the way through a Federal Circuit appeal.<sup>169</sup> (One exception is in pharmaceutical patent cases, which we analyze separately below.) In the end, this methodology captured practically all the parties most lawyers would associate with high-level patent litigation: Samsung, Apple, Microsoft, Google, and the like.

Using the list of parties most frequently accused of infringement, it was possible to search the Federal Circuit's docket (using Bloomberg Law, which draws from PACER) for each appearance of each litigant on the list<sup>170</sup> and the dataset of Federal Circuit oral arguments for each of those cases. Note that, though this process began with a list of accused infringers in district courts, this second search captured *all* Federal Circuit cases involving the relevant litigant, regardless of whether the litigant was a patentee or an alleged infringer in any given case.

In general, the gender breakdown for twenty-five of the most frequent litigants, which account for about 11% of the total dataset of oral arguments, is roughly the same as for Federal Circuit oral arguments overall. Out of 697 oral argument appearances by the most frequent litigants, 594, or 85.2%, were by men, and 103, or 14.8%, were by women, as indicated in Table 1 below.

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167. Docket Navigator is a research database that includes extensive information about all patent litigation filed in federal court, at the PTAB, and at the International Trade Commission. See *Scope of Data Available in Docket Navigator*, DOCKET NAVIGATOR, <https://search.docketnavigator.com/help/scope.html> [<https://perma.cc/6BHS-3VUF>].

168. There is, unfortunately, no easy way to search across the Federal Circuit's docket for the parties who appear most frequently, but, for reasons that will be clear shortly, the list of accused infringers is a good proxy.

169. See Mark A. Lemley & A. Douglas Melamed, *Missing the Forest for the Trolls*, 113 COLUM. L. REV. 2117, 2126 (2013).

170. In running these searches, corporate entities that were obviously related were combined. For example, the results for Samsung include Samsung Electronics America, Samsung Electronics Co., Samsung Semiconductor, and several other Samsung affiliates. And the results for Google include Google LLC, Google Corp., and Alphabet Corp.

**Table 1. Gender of Lawyers Presenting Oral Argument in the Federal Circuit on Behalf of 25 Frequent Litigants, 2010 Through 2019**

Party	Total	Men	Women
Apple	80	70 (87.3%)	10 (12.7%)
Google	65	61 (93.8%)	4 (6.2%)
Samsung	64	55 (85.9%)	9 (14.1%)
Mylan	49	36 (73.5%)	13 (26.5%)
Microsoft	40	34 (85.0%)	6 (15.0%)
Apotex	39	31 (79.5%)	8 (20.5%)
Teva	36	33 (91.7%)	3 (8.3%)
Motorola	32	29 (90.6%)	3 (9.4%)
Watson	30	23 (76.7%)	7 (23.3%)
HTC	28	25 (89.3%)	3 (10.7%)
Sandoz	27	14 (51.9%)	13 (48.1%)
LG	27	26 (96.3%)	1 (3.7%)
Amazon	26	24 (92.3%)	2 (7.7%)
Sony	24	23 (95.8%)	1 (4.2%)
AT&T	19	17 (89.5%)	2 (10.5%)
HP	17	13 (76.5%)	4 (23.5%)
Allergan	17	14 (82.4%)	3 (17.6%)
Lupin	15	12 (80.0%)	3 (20.0%)
Verizon	15	13 (86.7%)	2 (13.3%)
Cellco	12	10 (83.3%)	2 (16.7%)
Dell	11	10 (90.9%)	1 (9.1%)

Party	Total	Men	Women
ZTE	9	9 (100.0%)	0 (0.0%)
Wal-Mart	7	7 (100.0%)	0 (0.0%)
Lenovo	5	4 (80.0%)	1 (20.0%)
Blackberry	3	1 (33.3%)	2 (66.7%)
<b>TOTAL</b>	<b>697</b>	<b>594 (85.2%)</b>	<b>103 (14.8%)</b>

Among individual litigants, a few observations stand out. Of the ten companies with the most appearances in the dataset, seven had male attorneys present argument on their behalf 85% of the time or more. One interesting exception is that the frequent litigants with proportionately greater representation by women tended to be in the pharmaceutical industry: Mylan, Apotex, Watson, and Sandoz, for example, all had greater than 20% of their arguments presented by women attorneys. Indeed, the gender divide for Sandoz—a major generic pharmaceutical company—was nearly fifty-fifty.<sup>171</sup>

This raises the question: Are women lawyers disproportionately present in pharmaceutical patent litigation more generally? If so, that would be consistent with prior studies showing that companies in the pharmaceutical and health care industries tend to have higher rates of women inventors as compared to overall rates.<sup>172</sup> Likewise, prior studies have shown that women tend to outnumber men in the fields of undergraduate and graduate study that are most associated with pharmaceutical patents.<sup>173</sup>

Because the starting point for Table 1 was a list of parties frequently accused of patent infringement, the pharmaceutical companies captured on that table focus mainly on generic products. To get a clearer picture of both sides of pharmaceutical patent cases, we used Docket Navigator to generate a list of all litigants (both patentees and accused infringers) in so-called ANDA cases—patent infringement cases between brand name and generic pharmaceutical

171. The only obvious outlier among the pharmaceutical companies on Table 1 is Teva, which was represented by a woman only 8.3% of the time.

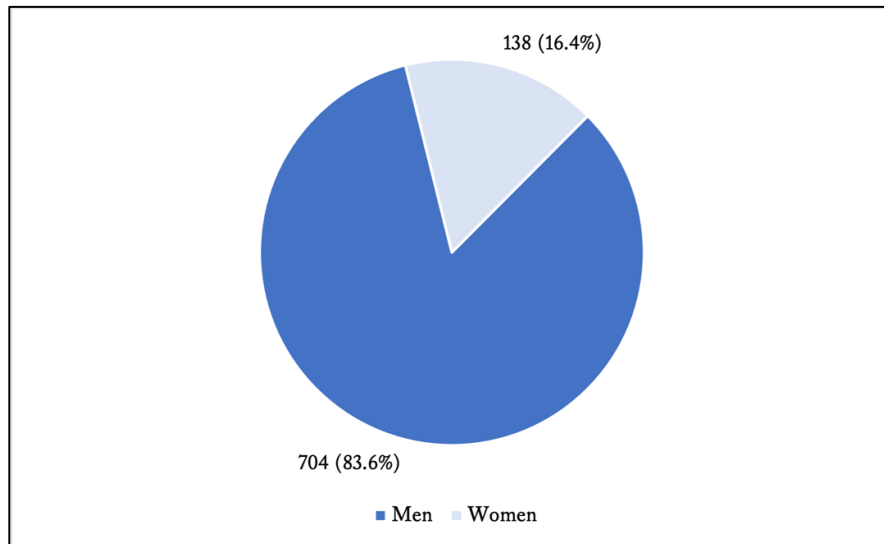
172. See OFF. OF THE CHIEF ECONOMIST, U.S. PAT. & TRADEMARK OFF., *PROGRESS AND POTENTIAL: 2020 UPDATE ON U.S. WOMEN INVENTOR-PATENTEEES* 7 (2020), <https://www.uspto.gov/sites/default/files/documents/OCE-DH-Progress-Potential-2020.pdf> [https://perma.cc/Z4ZM-2HV9].

173. See NAT'L CTR. FOR SCI. AND ENGINEERING STAT., NAT'L SCI. FOUND., *WOMEN, MINORITIES, AND PERSONS WITH DISABILITIES IN SCIENCE AND ENGINEERING* 14–18 (2021).

companies under the Hatch-Waxman Act.<sup>174</sup> It was then possible to use the methodology described above to determine which lawyers represented those companies at the Federal Circuit.

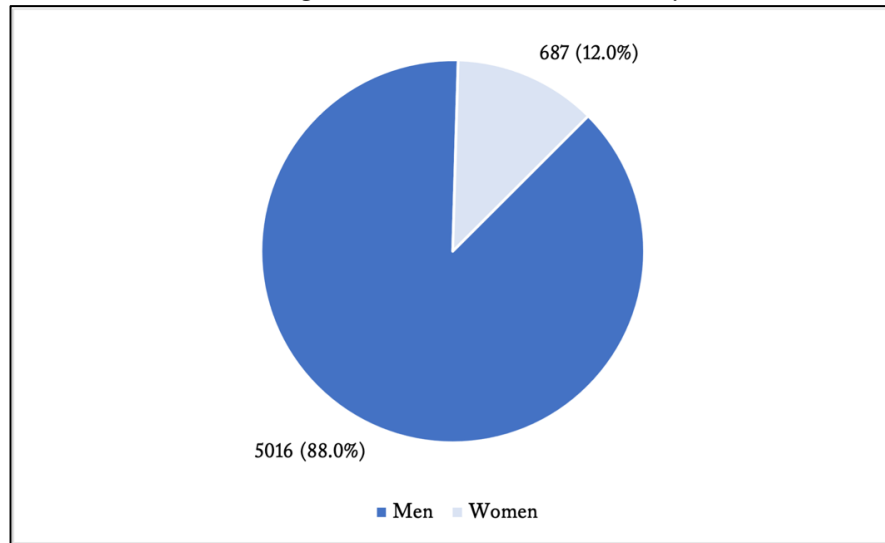
The ANDA-specific data confirms the initial findings from Table 1—women attorneys present oral argument in Federal Circuit pharmaceutical patent cases with greater frequency than in other types of patent cases. Specifically, as Figure 20 below shows, women presented argument 16.4% of the time in ANDA cases in the dataset (138 of 842), compared with 12.0% in non-ANDA cases (687 of 5703), a difference that is statistically significant at the 1% level ( $p < .005$ ).

Figure 20. Federal Circuit Oral Arguments in Patent Cases, 2010 Through 2019, ANDA Cases Only



174. The acronym ANDA stands for “abbreviated new drug application,” which a generic company files to piggyback on safety and efficacy data previously submitted by the manufacturer of a branded—and usually patented—product. *See generally* 21 U.S.C. § 355(j) (governing the contents of an ANDA and the process of filing it).

Figure 21. Federal Circuit Oral Arguments in Patent Cases, 2010 Through 2019, Non-ANDA Cases Only



\* \* \*

Today, nearly half of the Federal Circuit’s active judges are women. Indeed, it is no longer unusual to have a panel of judges that is entirely women.<sup>175</sup> The same goes for government advocates. For most of the past decade there was a more than fifty-fifty chance that a lawyer arguing a Federal Circuit patent case on behalf of the government would be a woman. But when it comes to attorneys from the private sector, the stereotype of patent law as a male-dominated field of practice remains grounded in truth.

#### IV. TOWARDS A MORE INCLUSIVE PATENT BAR

The phenomenon captured in this study’s empirical data—women being mostly absent from high-level law practice involving private-sector clients—is not unique to patent litigation at the appellate level.<sup>176</sup> A recent study of the bar

175. A series of Westlaw searches indicated that panels comprised entirely of women decided nineteen cases in 2019 alone. For another interesting data point, see Perry Cooper (@PerryECooper), TWITTER (Sept. 4, 2020, 9:56 AM), <https://twitter.com/PerryECooper/status/1301881768254074880> [<https://perma.cc/637G-M9SD>] (describing what she termed “Women’s Day at the Federal Circuit”: “Five of the six attorneys arguing before the Federal Circuit’s Panel H today are women—very unusual. One female judge presiding, Judge O’Malley. Of course, Panel G is 4/4 men arguing, but before an all-female panel of Prost, Moore, and Stoll”).

176. Afsharipour, *supra* note 77, at 362 (providing “a holistic analysis of the lead actors involved in M&A transactions, revealing gender disparities in leadership among each of these actors”).

in the Seventh Circuit found, similar to our study, that the women who argued cases disproportionately did so on behalf of the government and that women were particularly absent in “high dollar” cases.<sup>177</sup> In patent practice, one of us authored a recent study finding that, though men and women are represented roughly equally among the Patent Office employees who examine pharmaceutical patent applications (57.5% men and 42.5% women), the lawyers who prosecute<sup>178</sup> and litigate those extremely valuable patents are disproportionately men.<sup>179</sup>

More generally, there is copious literature on the lack of women—and particularly women of color—in elite civil litigation practices and the senior management of law firms.<sup>180</sup> The explanations for women’s underrepresentation are consistent across studies and time. To name a few: women are disproportionately responsible for dependent care and domestic work, and they are penalized in a system in which success is measured by billable hours.<sup>181</sup> Women receive lower profile assignments and fewer networking opportunities.<sup>182</sup> And the culture of law practice is dominated by older men who

177. AMY J. ST. EVE & JAMIE B. LUGURI, HOW UNAPPEALING: AN EMPIRICAL ANALYSIS OF THE GENDER GAP AMONG APPELLATE ATTORNEYS 14–15 (2021), [https://www.americanbar.org/content/dam/aba/administrative/women/how-unappealing-f\\_1.pdf](https://www.americanbar.org/content/dam/aba/administrative/women/how-unappealing-f_1.pdf) [<https://perma.cc/2BDL-ASX4>] (finding that, in 2019, 40% of the lawyers representing the government were women, as compared to 22% representing nongovernment clients, and that women argued only 17% of “high dollar” cases).

178. Patent prosecution is the process through which an inventor obtains a patent from the Patent Office.

179. S. Sean Tu, Paul R. Gugliuzza & Amy Semet, *Overqualified and Underrepresented: Gender Inequality in Pharmaceutical Patent Law*, 48 *BYU L. REV.* (forthcoming 2022) (manuscript at 36) (on file with the North Carolina Law Review). Specifically, 74.7% of the patent prosecutors in our dataset were men and 63.9% of patent litigators were men. *See id.* at 39–43.

180. *See, e.g.*, RHODE, TROUBLE, *supra* note 78, at 60–86; DEEPALI BAGATI, CATALYST, WOMEN OF COLOR IN U.S. LAW FIRMS 1–2 (2009), [https://www.catalyst.org/wp-content/uploads/2019/01/Women\\_of\\_Color\\_in\\_U.S.\\_Law\\_Firms.pdf](https://www.catalyst.org/wp-content/uploads/2019/01/Women_of_Color_in_U.S._Law_Firms.pdf) [<https://perma.cc/CY7S-LMW7>]; TSEDALE M. MELAKU, YOU DON’T LOOK LIKE A LAWYER: BLACK WOMEN AND SYSTEMIC GENDERED RACISM 19–34 (2019); Margalynne J. Armstrong & Stephanie M. Wildman, *Working Across Racial Lines in a Not-So-Post-Racial World*, in *PRESUMED INCOMPETENT: THE INTERSECTIONS OF RACE AND CLASS FOR WOMEN IN ACADEMIA* 224–41 (Gabriella Gutiérrez y Muhs, Yolanda Flores Niemann, Carmen G. González & Angela P. Harris eds., 2012).

181. *See, e.g.*, JOAN C. WILLIAMS, UNBENDING GENDER: WHY FAMILY AND WORK CONFLICT AND WHAT TO DO ABOUT IT 273 (2000); JOAN C. WILLIAMS, RESHAPING THE WORK-FAMILY DEBATE: WHY MEN AND CLASS MATTER 4–11 (2010) [hereinafter WILLIAMS, RESHAPING]; MAXINE EICHNER, THE SUPPORTIVE STATE: FAMILIES, GOVERNMENT, AND AMERICA’S POLITICAL IDEALS 6 (2010); JOANNA GROSSMAN, NINE TO FIVE: HOW GENDER, SEX, AND SEXUALITY CONTINUE TO DEFINE THE AMERICAN WORKPLACE 309–14 (2016).

182. DESTINY PEERY, PAULETTE BROWN & EILEEN LETTS, LEFT OUT AND LEFT BEHIND: THE HURDLES, HASSLES, AND HEARTACHES OF ACHIEVING LONG-TERM LEGAL CAREERS FOR WOMEN OF COLOR viii, xi (2020), <https://www.americanbar.org/content/dam/aba/administrative/women/leftoutleftbehind-int-f-web-061020-003.pdf> [<https://perma.cc/WJV5-QA2M>]; BAGATI, *supra* note 180, at 31–32.

pass down their work to other men.<sup>183</sup> These explanations all highlight cultural and structural barriers that cause the sustained exclusion of women attorneys from important professional roles.

In this Article, we do not purport to solve or comprehensively address those deep-rooted inequalities, which are not unique to the practice of law, much less patent law.<sup>184</sup> Instead, our aims are twofold: first, to offer evidence making clear the *scope* of gender inequality in elite patent litigation, and, second, to spotlight incremental changes—steps that law firms, their clients, and the courts could take—to ensure that a wider array of lawyers get opportunities to participate in patent litigation. After discussing those strategies below, we conclude by identifying structural reforms that may be necessary to create an appellate patent bar that is more reflective of the population of law school graduates and practicing lawyers.

#### A. *Law Firms*

Law firms have a pivotal role to play in bringing greater gender balance to the patent bar and dismantling gendered stereotypes in patent law.<sup>185</sup> We hope that by quantifying the gender gap in elite patent law practice, this Article spurs introspection by leading patent lawyers, at least some of whom will be troubled by the numbers we report in this study. Indeed, since we began work on this project, patent lawyers seem to be paying increased attention to gender inequality in patent practice.<sup>186</sup>

As this Article's empirical data suggest, one incremental step would be for law firms to ensure that women gain experience making arguments before

183. See, e.g., Mary Ellen Egan, *Too Few Women in Court*, ALM (Apr. 25, 2016), <https://www.bloomberglaw.com/document/X9U5QPAS000000?jsearch=1202755433078#jcite> [<https://perma.cc/7TKG-W3XR> (staff-uploaded, dark archive)].

184. See, e.g., Adam Grant, *Who Won't Shut Up in Meetings? Men Say It's Women. It's Not.*, WASH. POST (Feb. 18, 2021, 6:00 AM), <https://www.washingtonpost.com/outlook/2021/02/18/men-interrupt-women-tokyo-olympics> [<http://perma.cc/JQR4-KWFF> (dark archive)].

185. See Cooper, *supra* note 123 (interviewing Mel Bostwick, partner at Orrick, Herrington & Sutcliffe LLP, who stated, "Even if it's not a matter of who has an engineering degree, [it is] still about context—the perception that women can't do science").

186. See, e.g., *FCBA Remote Program on Gender Inequality Among Federal Circuit Advocates*, PAT. DOCS (Sept. 18, 2021), <https://www.patentdocs.org/2021/09/fcba-remote-program-on-gender-inequality-among-federal-circuit-advocates.html> [<https://perma.cc/9XUL-Z98R>] (discussing Federal Circuit Bar Association panel on gender inequality in patent law); John Murph, *Minority in IP: Navigating a Lonely Road*, WASH. LAW., Mar.–Apr. 2022, at 26 <https://washingtonlawyer.dcbbar.org/marchapril2022/index.php#p/26> [<https://perma.cc/9NMU-ZB9K>] (discussing "glaring racial and gender disparities" in the practice of intellectual property law); Matthew Bultman, *Diversity Woes in Patent Field Lead Lawyers To Try New Ideas*, BLOOMBERG L. (Feb. 28, 2022, 5:01 AM), <https://news.bloomberglaw.com/ip-law/diversity-woes-in-patent-field-lead-lawyers-to-try-new-ideas> [<https://perma.cc/YF2R-D56S> (staff-uploaded, dark archive)] (discussing a program to train women and minority scientists and engineers in patent work and connect them with firms practicing patent law before they enter law school).

courts that decide patent cases.<sup>187</sup> Generally speaking, one often-proposed avenue for getting opportunities to hone advocacy skills and build a reputation is pro bono litigation.<sup>188</sup> Though pro bono patent litigation is rare, the Federal Circuit Bar Association runs a well-regarded program for pro bono representation of litigants in veterans' benefits cases,<sup>189</sup> which, like patent cases, fall within the Federal Circuit's exclusive jurisdiction.<sup>190</sup> Encouraging membership on the list of pro bono veterans' attorneys provides a clear path to oral argument before the Federal Circuit, which is a potentially important experience for an aspiring patent litigator. (To say nothing of the service it provides to a veteran who might otherwise receive no legal advice.)

Yet pro bono work can only go so far. Law firms must credit that work in salary and promotion decisions, and it is not clear that always happens.<sup>191</sup> Without the conferral of respect, pro bono representation might add to an attorney's workload at the expense of assignments with high-profile paying clients, perpetuating a cycle of exclusion from a firm's most valued accounts.<sup>192</sup>

A more direct way to eliminate the gender disparity documented in this Article would be for senior (usually male) partners to cede some oral argument responsibility and for firms (and clients) to encourage and support those decisions.<sup>193</sup> The data in this study indicate that, in some years, the top private sector Federal Circuit litigators argue nearly one patent case per month. At least some of those cases could be passed on to lawyers to increase diversity at the patent bar without diminishing the reputations or prestige of well-known

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187. See Cooper, *supra* note 123 (interviewing Irena Royzman, partner at Kramer Levin Naftalis & Frankel LLP, who stated, "It's an issue of getting chances . . . . It perpetuates the problem—if you can't get that first argument it's harder to get them down the line"); *id.* (interviewing Jess Ellsworth, partner at Hogan Lovells U.S. LLP, who stated, "The reality is once you've done one, it's easier to get the second and the third . . . . There's a snowball effect").

188. See Geoffrey Derrick & Lauren Weinstein, *Making the Most of Pro Bono Opportunities: Building a Litigation Practice*, 45 LITIG., Winter 2019, at 1, <https://www.akingump.com/a/web/102683/Derrick-ABA-Litigation-Journal-Pro-Bono-Article.pdf> [<https://perma.cc/9JTF-4N5Y>].

189. *Veterans Pro Bono Initiative*, FED. CIR. BAR ASS'N, <https://fedcirbar.org/Pro-Bono/Veterans-Pro-Bono/Overview-FAQ> [<https://perma.cc/2FR4-FH5T>].

190. 38 U.S.C. § 7292.

191. The National Association for Law Placement reported that as of 2009, about three-quarters of law firms credit pro bono hours as equal to billable hours, though whether firm decision-makers actually stick to those policies when assessing salary and promotion decisions is an open question. See *A Look at Associate Hours and at Law Firm Pro Bono Programs*, NAT'L ASS'N FOR L. PLACEMENT (Apr. 2010), <https://www.nalp.org/july2009hoursandprobono> [<https://perma.cc/7U9M-SJVV>].

192. See, e.g., PEERY ET AL., *supra* note 182, at ix (noting that women of color were less satisfied with the distribution of assignments and had less access to work with high profile clients).

193. See Rodriguez, *supra* note 100 (discussing the relative absence of women in Supreme Court arguments with Elizabeth Prelogar, then a partner at Cooley LLP and currently the Solicitor General, who indicated that "[t]he answer often lies in someone more senior having to be willing to give up the coveted opportunities to argue" before the Court).



advocates.<sup>194</sup> Such a practice might even be in the client's best interest, particularly when the less well-known lawyer was primary responsible for drafting the brief and knows the case inside and out. As we discussed above, this write-the-brief, argue-the-case dynamic appears to have contributed significantly to the gender parity we have documented among lawyers arguing at the Federal Circuit on behalf of the PTO Solicitor's Office.<sup>195</sup>

Studies on diversity in the management of law firms have suggested that increasing opportunities for women and people of color is good for business—increases in profitability correlate with diversity in firms' workforces.<sup>196</sup> But causation could also run the other way. As Deborah Rhode notes: "Financial success may sometimes do more to enhance diversity than the converse; organizations that are on strong financial footing are better able to invest in diversity initiatives and sound employment practices such as mentoring and work/life accommodations that promote both diversity and profitability."<sup>197</sup>

Most major law firms have made commitments to diversity, but the data on patent appeals suggests that those commitments have not made a significant difference in the upper echelons of those firms. The literature on diversity in the legal profession laments that law firms are quick to tout the value of inclusion but then engage in strategies that are superficial at best and treat people as tokens at worst.<sup>198</sup> To enact sustained change, firms' most powerful lawyers must sometimes be willing to use their high-profile roles for the career advancement of lawyers who do not look like them.

The problem, of course, is that such a strategy depends on the will of powerful actors. To move beyond the status quo, the expectations of and incentives for those in power must change. For instance, some large corporations have begun tying annual executive compensation to explicit, objective diversity and inclusion goals.<sup>199</sup> Law firms could take similar steps. And some have by, for example, eliminating "origination credits," which reward powerbrokers with an essentially indefinite stream of commission-like income

194. *See id.* (discussing an interview with Catherine Carroll, Partner-in-Charge of WilmerHale's Washington office, who noted that "both firms and clients have to be willing to go beyond the credentials of somebody's bio page when choosing a strong oral advocate").

195. *See supra* Section III.B.3.

196. RHODE, TROUBLE, *supra* note 78, at 78.

197. *Id.* at 79.

198. *See, e.g.,* PEERY ET AL., *supra* note 182, at viii ("[Women of color] felt that they were often treated as tokens, and trotted out to clients only when it would help the firm look good but not necessarily in ways that helped them further their own careers.").

199. *See* Iain Carlos, *DEI Is Now a Factor in Executive Pay but There's One Big Disconnect*, BUS. J., <https://www.bizjournals.com/bizjournals/news/2021/07/29/dei-is-not-in-long-term-incentive-programs.html> [<https://perma.cc/KSA9-PCWS>] (last updated July 29, 2021, 3:49 PM).

from key clients.<sup>200</sup> In that vein, a recent report by the American Bar Association and the Minority Corporate Counsel Association on “bias interrupters” provides a clear roadmap, complete with objective metrics and techniques for furthering diversity in law firm work assignment and compensation systems.<sup>201</sup> Otherwise, senior partners will have little incentive (indeed, there is likely a disincentive) to pass on opportunities to argue an appeal.

### B. *Clients*

A 2015 American Bar Association report noted that clients “can use their considerable economic clout with their law firms to insist that women be given prominent positions and significant responsibility in . . . teams assembled by the firm for the client’s matters.”<sup>202</sup> Some clients have started to exercise that clout. In an article cataloguing the efforts of various large companies to encourage equity in the law firms they hire, Lynn Scott notes that HP, for example, “withholds 10% of its legal spend[ing] from any law firm that does not meet its diversity and inclusion requirements.”<sup>203</sup> Facebook similarly requires all legal teams to consist of at least 33% women and people of color.<sup>204</sup> And Microsoft has created a strategic partnership program in which firms receive bonuses of up to two percent of their legal fees when they meet specified diversity goals.<sup>205</sup>

In January 2019, 170 companies signed an open letter to law firm partners addressing the need for diversity in legal representation.<sup>206</sup> The letter stated:

200. See Irene Liu, Robin Preble & Megan Redmond, *Strategies To Help Close IP Law’s Long-Standing Gender Gap*, LAW360 (Apr. 19, 2022, 5:12 PM), <https://www.law360.com/ip/articles/1483932> [<https://perma.cc/6MN8-RJX2> (staff-uploaded, dark archive)].

201. JOAN C. WILLIAMS, MARINA MULTHAUP, SU LI & RACHEL KORN, YOU CAN’T CHANGE WHAT YOU CAN’T SEE: INTERRUPTING RACIAL & GENDER BIAS IN THE LEGAL PROFESSION 18–21, 25–28 (2018), <https://mcca.com/wp-content/uploads/2018/09/You-Cant-Change-What-You-Cant-See-Executive-Summary.pdf> [<https://perma.cc/M9FC-TWC2>].

202. STEPHANIE A. SCHARF & ROBERTA D. LIEBENBERG, FIRST CHAIRS AT TRIAL: MORE WOMEN NEED A SEAT AT THE TABLE 16 (2015), [https://www.americanbar.org/content/dam/aba/administrative/women/first\\_chairs\\_final.pdf](https://www.americanbar.org/content/dam/aba/administrative/women/first_chairs_final.pdf) [<https://perma.cc/3PKK-K7TP>]. Outside of the context of law practice, scholars have captured private firms’ power “to address social, economic, and environmental problems” through employment contracts, supply contracts, and in corporate governance. See, e.g., Jonathan C. Lipson, *Promising Justice: Contract (As) Social Responsibility*, 2019 WIS. L. REV. 1109, 1110.

203. Lynn S. Scott, *Moving the Needle—We Can’t Give Up*, LAW PRAC. TODAY (May 14, 2019), <https://www.lawpracticetoday.org/article/moving-needle-cant-give> [<https://perma.cc/AH4G-R6F9>].

204. *Id.*

205. *Id.*

206. This tracks earlier calls by corporate clients to law firms: “More than a hundred companies have signed the ‘Call to Action: Diversity in the Legal Profession,’ in which they pledge to ‘end or limit . . . relationships with firms whose performance consistently evidences a lack of meaningful interest in being diverse.’” RHODE, TROUBLE, *supra* note 78, at 79.

It is not enough to commit your firm to diversity during the recruiting process or to hire a diversity and inclusion officer and expect that person can effect change without the full commitment of each member of the firm. Instead, the reality is that you must consciously and personally invest in diversity and inclusion and interview, hire, mentor, support, sponsor, and promote talented attorneys who don't always look like you or share your background.<sup>207</sup>

Among the prominent tech companies that signed the letter were Lyft, Waymo, Toshiba, NEC, and Qualtrics.<sup>208</sup> Yet, as the data reported in this study show, there is still a long way to go among the companies most frequently involved in patent litigation. Indeed, in contrast to tech companies' public calls for diversity, a burgeoning literature highlights how pervasive sexism characterizes corporate environments in the tech sector.<sup>209</sup>

The COVID-19 pandemic may have mixed effects on whether clients can help incentivize meaningful change by the law firms they employ. On one hand, because many court proceedings are now conducted over the internet or telephone, it is easier for clients to observe the attorneys who represent them because they can attend online hearings without the cost of travel.<sup>210</sup> Judge James Donato of the Northern District of California observed recently that video hearings open up the courtroom to people who typically would not attend a hearing, including corporate clients who "are writing massive checks, and never watch their lawyers."<sup>211</sup> A corporate client can log onto Zoom and watch a potentially less experienced lawyer argue a discovery motion or other minor proceeding for which the client probably would not have bothered to travel.<sup>212</sup> Although years of experience may not be a perfect proxy for increased diversity, new lawyers, given the demographics of recent graduates, are more likely to be

207. Letter from GCs for Law Firm Diversity to Law Firm Partners, <https://theiilp.wildapricot.org/resources/Documents/GCStatementDiversity.pdf> [<https://perma.cc/8SNF-KYPH>].

208. *Id.*

209. Uber's management and culture of competition and overt sexism is one well-known example. See Carbone et al., *Rule-Breaking*, *supra* note 13, at 1120–23; see also Adrian Daub, *How Sexism Is Coded into the Tech Industry*, NATION (Apr. 26, 2021), <https://www.thenation.com/article/society/gender-silicon-valley> [<https://perma.cc/3QY2-KS45> (dark archive)].

210. Rodriguez, *supra* note 100.

211. Cara Bayles, *4 Ways Coronavirus May Forever Change Legal Tech*, LAW360 (June 15, 2020, 2:55 PM), <https://www.law360.com/articles/1282642/4-ways-coronavirus-may-forever-change-legal-tech> [<https://perma.cc/EU6K-PCGQ> (staff-uploaded, dark archive)].

212. Dani Kass, *Judges Stoll, Albright Dish on Litigating During COVID-19*, LAW360 (Dec. 11, 2020, 8:37 PM), <https://www.law360.com/ip/articles/1322486> [<https://perma.cc/4QNN-B6TU> (staff-uploaded, dark archive)] (explaining that U.S. District Judge Alan Albright reported that "when he holds [patent] claim construction hearings [on Zoom], there are typically 60 to 70 people watching . . . ranging from the public, to attorneys, to clients in the U.S. and abroad").

women or people of color.<sup>213</sup> And the client can reward a good performance by insisting that that lawyer (who probably comes with a lower billing rate in any case) be given the opportunity to argue a higher stakes matter the next time around.

Yet with this promise of client connection through online platforms and telephonic court hearings there is the peril of reinforcing inequalities that already exist. Since the pandemic began, women have exited the labor force at much higher rates than men.<sup>214</sup> Women, and especially women of color, have been acutely burdened by the closure of schools, daycares, and elder care facilities.<sup>215</sup> The result could be that those without caretaking responsibilities will be best positioned to take advantage of new opportunities.

To effect real change, clients, like law firms, must be willing to make good on their promise to make engagement decisions based on whether firms meet benchmarks of diversity. Law firms have reported being frustrated by clients who “asked for detailed information on diversity and then failed to follow up or to reward firms that had performed well.”<sup>216</sup> Indeed, the vast gender inequalities documented in our study suggest that, for all their general aspirations about equity and policies seeking to increase diversity, when making day-to-day decisions about who should argue a high-stakes patent case, corporations usually go with the high-profile, well-known advocate, who is usually a man.<sup>217</sup>

### C. Courts

Courts and judges are positioned to encourage diversity and inclusion among arguing attorneys in ways that clients and law firms are not. Indeed,

213. See Jason P. Nance & Paul E. Madsen, *An Empirical Analysis of Diversity in the Legal Profession*, 47 CONN. L. REV. 271, 277 n.18 (2014) (noting increased gender and racial diversity among “young individuals who recently began their career[s]” and those who are 35 years old).

214. Kathryn A. Edwards, *Women Are Leaving the Labor Force in Record Numbers*, RAND BLOG (Nov. 24, 2020), <https://www.rand.org/blog/2020/11/women-are-leaving-the-labor-force-in-record-numbers.html> [<https://perma.cc/P4NW-Y2T5>]. But see Xiumei Dong, *COVID-19 Hasn't Forced an Exodus of Women from BigLaw*, LAW360 (Feb. 25, 2021, 11:35 AM), <https://www.law360.com/pulse/articles/1358490/covid-19-hasn-t-forced-an-exodus-of-women-from-biglaw> [<https://perma.cc/SZB6-E4NF> (staff-uploaded, dark archive)] (reporting that about 40% of attorneys leaving the 200 largest law firms in 2020 were women, “a percentage that is consistent with results from the past three years”).

215. Claire Cain Miller, *When Schools Closed, Americans Turned to Their Usual Backup Plan: Mothers*, N.Y. TIMES (Nov. 17, 2020), <https://www.nytimes.com/2020/11/17/upshot/schools-closing-mothers-leaving-jobs.html> [<https://perma.cc/55FL-Q6CJ> (dark archive)]; Steven Brown, *How COVID-19 Is Affecting Black and Latino Families' Employment and Financial Well-Being*, URB. INST. (May 6, 2020), <https://www.urban.org/urban-wire/how-covid-19-affecting-black-and-latino-families-employment-and-financial-well-being> [<https://perma.cc/954D-X8YX>].

216. RHODE, TROUBLE, *supra* note 78, at 80.

217. See *supra* Section III.B.4 for a discussion of the demographics of the most frequent Federal Circuit patent litigators.

many judges have already memorialized preferences for diversity and inclusion in standing orders and rules. One example that focused on private, commercial litigation is from Justice Melissa Crane, who sits on the Commercial Division of the Supreme Court of New York. Her standing order on practice and procedure explicitly acknowledges the “absence historically of lawyers from diverse backgrounds and women appearing in . . . commercial cases.”<sup>218</sup> It also states that a party’s indication that oral argument will be handled by a woman or a lawyer from a “diverse background,” particularly in cases where they “drafted or contributed significantly to the underlying motion or prepared the witness,” “will weigh in favor of holding a hearing” when the court would otherwise be inclined to rule on the papers.<sup>219</sup> Similarly, Justice Joel Cohen, also on the Supreme Court of New York, includes the following provision in his courtroom rules: “The Court strongly encourages substantive participation in court proceedings by women and diverse lawyers, who historically have been underrepresented in the commercial bar, as well as by lawyers who have been practicing for five years or less.”<sup>220</sup>

In the federal courts, numerous judges have adopted formal measures encouraging stand-up opportunities for less-experienced lawyers,<sup>221</sup> though a substantial limitation of those measures is their omission of gender or race as an explicit consideration.<sup>222</sup> Nevertheless, many of those judges have significant dockets of patent cases, including several judges in the Northern District of California and the District of Delaware. Judge Alan Albright of the Western District of Texas, who currently hears more patent cases than any other judge in the country,<sup>223</sup> has stated that, at patent claim construction hearings, he is “open to having more [claim] terms be in dispute if it means new attorneys get to argue them.”<sup>224</sup>

218. Melissa A. Crane, *Practices and Procedures*, N.Y. SUP. CT. (Apr. 14, 2022), <https://www.nycourts.gov/LegacyPDFS/courts/comdiv/NY/PDFs/Part-60-Rules.pdf> [<https://perma.cc/26SJ-NMW2>].

219. *Id.*

220. Joel M. Cohen, *Practice and Procedures*, N.Y. SUP. CT. (May. 24, 2022), <https://www.nycourts.gov/LegacyPDFS/courts/comdiv/NY/PDFs/Practices-Part-3.pdf> [<https://perma.cc/U3AP-PEC3>].

221. See generally *Judicial Orders Providing/Encouraging Opportunities for Junior Lawyers*, NEXT GENERATION LAWS. (2017), <https://nextgenlawyers.com/wp-content/uploads/2017/02/JudicialOrdersRegardingNextGen.docx-2.pdf> [<https://perma.cc/7G49-D4W9>] (listing judicial orders encouraging opportunities for less-experience lawyers).

222. For a survey of the different types of standing orders used by judges to encourage the participation of inexperienced lawyers in court hearings and analysis of their effects, see Kimberly A. Jolson, *The Power of Suggestion: Can a Judicial Standing Order Disrupt a Norm?*, 89 U. CIN. L. REV. 455, 456–57 (2021).

223. See Anderson & Gugliuzza, *supra* note 51, at 448.

224. Kass, *supra* note 212. Claim construction is the process by which a judge determines the meaning of the patent’s claims, which define the scope of the patentee’s invention. See *supra* note 64.

The Patent Trial and Appeal Board has also taken steps to encourage arguments from a broader cross-section of the bar. In May 2020, it created a Legal Experience and Advancement Program, which offers parties up to fifteen minutes of extra argument time if they permit an inexperienced attorney to present some or all of the party's argument.<sup>225</sup> Though that program is currently focused on inexperienced lawyers, given the gender gap among lawyers registered to practice at the PTO and appearing before the PTAB,<sup>226</sup> it could (like most federal judges' orders) be expanded to reward firms and clients for allowing women lawyers and lawyers of color to present arguments. Indeed, the PTAB's own judges have urged firms to use the program more frequently in order to create a "pipeline for more diverse people to . . . argue before us."<sup>227</sup>

An explicit focus on women and people of color would be in step with the American Bar Association's recent resolution encouraging judges "to promote and support women in obtaining speaking and leadership roles in the courtroom."<sup>228</sup> The Association likewise has produced substantial research on the hurdles faced by people of color—particularly women of color—seeking advancement in the legal profession.<sup>229</sup>

Crucially, the Federal Circuit itself has created a roadmap for how law firms, clients, and the courts can collaborate to increase argument opportunities for lawyers from underrepresented groups. At the outset of the COVID-19 pandemic, the Federal Circuit began deciding a greater-than-usual proportion of cases on the briefs, without oral argument.<sup>230</sup> A case called *In re Publicover*<sup>231</sup> was slated to be one of those cases. But when the Federal Circuit canceled argument, Google, which owned the rights in the patent application at issue (and that the PTO had rejected), filed a motion to reconsider, noting that its "most knowledgeable attorney on the matter" was an associate in the Seattle

225. *Legal Experience and Advancement Program (LEAP)*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/leap> [<https://perma.cc/RGH8-SZ5C>]. To qualify for the program, a lawyer must have presented "three or fewer substantive oral arguments in any federal tribunal, including the PTAB." *Id.*

226. *See supra* notes 46–53 and accompanying text.

227. Samantha Handler, *Patent Tribunal Judges Urge Firms To Send Women, Diverse Lawyers*, BLOOMBERG L. (Apr. 28, 2022, 5:53 AM), [https://www.bloomberglaw.com/bloomberglawnews/ip-law/XF6TA9I8000000?bna\\_news\\_filter=ip-law#jcite](https://www.bloomberglaw.com/bloomberglawnews/ip-law/XF6TA9I8000000?bna_news_filter=ip-law#jcite) [<https://perma.cc/R6DQ-PX6Z> (staff-uploaded, dark archive)] (quoting Michelle Nerozzi-Ankenbrand, a senior lead administrative patent judge at the PTAB).

228. AM. BAR ASS'N & N.Y. BAR ASS'N, RESOLUTION 10A, at 7 (2018), <https://www.americanbar.org/content/dam/aba/images/abanews/mym2018res/10a.pdf> [<https://perma.cc/BY2Y-Q23X>].

229. *See generally* PEERY ET AL., *supra* note 182 (describing problems women of color face advancing in the legal profession).

230. Brian Matsui, Seth Lloyd & Samuel Goldstein, *What's Changing at the Remote Fed. Circ.*, LAW360 (May 6, 2020, 2:57 PM), <https://www.law360.com/articles/1268514> [<https://perma.cc/QX2J-WQ7P> (staff-uploaded, dark archive)].

231. 813 F. App'x 527 (Fed. Cir. 2020).

office of the law firm Perkins Coie who “ha[d] not previously argued a Federal Circuit appeal.”<sup>232</sup> The motion also noted that “Google and its outside law firms . . . are collaborating to increase participation by and provide opportunities to promising junior and diverse lawyers in their appellate matters.”<sup>233</sup> The Federal Circuit granted the motion<sup>234</sup> and held argument by phone in May 2020.<sup>235</sup>

That courts and judges are aware of the need to spread arguments among a variety of lawyers is a step toward increasing diversity at the patent bar. But the tendency to focus on less-experienced lawyers, rather than gender or race specifically, may make those measures insufficient to eliminate the inequalities documented in this Article.

#### D. Structural Barriers

This Article’s empirical findings on gender inequality in patent litigation add to a rich literature assessing how contemporary professional culture thwarts efforts at inclusion. In this final section, we reflect on three structural barriers identified by that literature, which involve considerations of competition, caregiving, and race, and we consider how those barriers relate to our study and impede the strategies for reform just described.

*Competition.* Large law firms, including those that are leaders in appellate patent litigation, have profit-driven bottom lines.<sup>236</sup> Naomi Cahn, June Carbone, and Nancy Levit have written persuasively on the zero-sum competitive ethos that characterizes corporate work today, including law practice.<sup>237</sup> For corporations, this emphasis on internal competition reflects a

232. Appellants’ Motion to Reconsider the Order Canceling Oral Argument and to Reschedule Oral Argument for a Later Date at 1, *In re Publicover*, 813 F. App’x 527 (Fed. Cir. 2020) (No. 19-1883).

233. *Id.*

234. Perry Cooper, *Google, Perkins Coie Get Federal Circuit Argument Reinstated*, BLOOMBERG L. (Apr. 22, 2020, 12:40 PM), <https://www.bloomberglaw.com/document/X7U03JUO000000> [<https://perma.cc/9RYJ-8F6S> (staff-uploaded, dark archive)].

235. *Id.* The argument, in fact, featured women on both sides. *In re Publicover*, 813 F. App’x at 527.

236. If any proof is needed, see the coverage of annual “profits per partner” lists. *See, e.g., The 2021 Global 100: Ranked by Profits Per Equity Partner*, AM. LAW. (Sept. 23, 2021, 1:30 PM), <https://www.law.com/international-edition/2021/09/21/the-2021-global-100-ranked-by-profits-per-equity-partner/?sreturn=20220307102120> [<https://perma.cc/GC4A-Z79D> (staff-uploaded, dark archive)].

237. CAHN ET AL., *supra* note 77, at 12. Carbone, Cahn, and Levit have described the “triple bind” for women:

The triple bind suggests that women lose if they do not play by the same terms as the men, lose if they do try to play on the same terms by being disproportionately punished for displaying the self-centered, rule-breaking behavior of the men, and over time become less likely to apply for such positions and thus more likely, individually and as a group, to be perceived as lacking what it takes to succeed in such environments.

shift in compensation to high-stakes bonus systems that occurred in the 1990s.<sup>238</sup> Law firms followed suit, rewarding equity partners with dramatically higher salaries than other lawyers at the firm and conferring governance control and reputation on these so-called rainmakers.<sup>239</sup>

On this view, success—marked by, for example, arguing an important appellate patent case—comes at a price of time, insiderism, assimilation, and outcompeting those around you. In qualitative studies of the legal profession, men seem more likely to make those commitments.<sup>240</sup> Research also suggests that women are less likely than men to thrive when compensation depends on their comparative performance to colleagues.<sup>241</sup>

The commitment of time, in particular, is key. Women (and especially women of color) already pay what has been called an “inclusion tax”: “time, money, and mental and emotional energy” they expend “to gain entry to and acceptance [in] traditionally white and male institutional spaces.”<sup>242</sup> In addition, staying on the partnership track means long hours in the office, frequent traveling, and investment in client cultivation—a “total commitment to the firm.”<sup>243</sup> “Total commitment” crowds out other responsibilities that women may

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Carbone et al., *Rule-Breaking*, *supra* note 13, at 1126–27; *see also* Naomi Cahn, June Carbone & Nancy Levit, *Gender and the Tournament: Reinventing Antidiscrimination Law in an Age of Inequality*, 96 TEX. L. REV. 425, 471–72 (2018) (noting that antidiscrimination law is ill-suited for penalizing practices that disadvantage women in corporate workplaces). For discussion of a “double bind”—either conforming to the competitive model of advancement and failing to be adequately feminine—for women working at large law firms, *see* Cynthia Fuchs Epstein, Robert Sauté, Bonnie Oglensky & Martha Gever, *Glass Ceilings and Open Doors: Women’s Advancement in the Legal Profession*, 64 FORDHAM L. REV. 306, 356 (1995).

238. CAHN ET AL., *supra* note 77, at 21–22.

239. Hefty financial rewards come with success at a law firm, with equity partners earning substantially more than associates. *Id.* at 21 (“An equity partner at a top firm can make . . . eight to nine times what an average lawyer makes.”).

240. Kenneth G. Dau-Schmidt & Kaushik Mukhopadhyaya, *Men and Women of the Bar: A Second Look at the Impact of Gender on Legal Careers 7–12* (June 15, 2022) (unpublished manuscript) (on file with the North Carolina Law Review); *see also* WILLIAMS, *RESHAPING*, *supra* note 181, at 4–11 (explaining the identities bound up in masculinity and noting care-work imbalances will not change without redefining masculinity and taking account of class privilege).

241. *See, e.g.*, Jeffrey A. Flory, Andreas Leibbrandt & John A. List, *Do Competitive Workplaces Deter Female Workers? A Large-Scale Natural Field Experiment on Job Entry Decisions*, 82 REV. ECON. STUD. 122, 124 (2015) (observing that “women, and to some extent even men, are repelled by competitive work environments, but that women have a stronger aversion to them”).

242. Tsedale M. Melaku, *Why Women and People of Color in Law Still Hear “You Don’t Look Like a Lawyer”*, HARV. BUS. REV., Aug. 7, 2019, at 4, <https://hbr.org/2019/08/why-women-and-people-of-color-in-law-still-hear-you-dont-look-like-a-lawyer> [<https://perma.cc/M3FC-5BWB> (dark archive)].

243. CAHN ET AL., *supra* note 77, at 21. As Cahn, Carbone, and Levit describe, “[o]ne law firm associate in Washington, D.C., described to us his law firm’s ‘total commitment’ ideal”: “The partners, addressing young associates, told them that if the firm was the not the number one thing in their lives—the first thing they thought about in the morning and the last thing they thought about at night—they didn’t belong there.” *Id.*



be less willing—or less free—to shed.<sup>244</sup> That ethic problematically shifts responsibility for workplace culture from the institution to the individual.

*Caregiving.* Countless studies confirm that women remain much more likely to take time away from their careers to engage in dependent care than men.<sup>245</sup> The effects of care commitments are reflected in this Article’s empirical data on patent litigation, which demonstrates the low rates at which women ascend to the tops of private practice hierarchies, marked, in part, by arguing appellate patent cases.

Decades of scholarship have documented the costs to people who take care of relatives and dependents<sup>246</sup> as well as how the value and importance of that care is perpetually discounted.<sup>247</sup> On average, caregivers spend fifty-four hours per week fulfilling those roles,<sup>248</sup> yet the bulk of caregiving is unremunerated.<sup>249</sup>

244. Compare popular writing on “leaning in” to workplaces. SHERYL SANDBERG & NELL SCOVELL, *LEAN IN: WOMEN, WORK, AND THE WILL TO LEAD* 3 (2013) (arguing that women must “lean in” to overcome internal and external barriers in the workplace by taking initiative and being “agents in their own success”). For a critique of “leaning in” and its focus on white women in corporate practice, see Anne-Marie Slaughter, *Yes, You Can*, N.Y. TIMES (Mar. 7, 2013), <http://www.nytimes.com/2013/03/10/books/review/sheryl-sandbergs-lean-in.html> [https://perma.cc/HZG8-PVPZ (dark archive)].

245. Both men and women report dissatisfaction with the long hours that mean less time with family. But a recent study of legal careers fifteen years after law school graduation found that “[a]lthough men’s incomes remain high relative to women’s, their satisfaction with family has declined steadily . . . while women’s satisfaction with family life has remained higher and roughly constant.” Dau-Schmidt & Mukhopadhaya, *supra* note 240, at 95–96. The study thus concludes that “[i]t seems that the nontraditional roles for men are becoming even less attractive.” *Id.* at 96.

246. A long line of feminist and family law scholarship has identified the means by which care work is excluded from the market. This exclusion rests on gendered expectations of what labor family members should provide as acts of altruism and gendered expectations of parents, partners, and children. See, e.g., Patricia Smith, *Family Responsibility and the Nature of Obligation*, in *KINDRED MATTERS: RETHINKING THE PHILOSOPHY OF THE FAMILY* 44–46 (Diana Tietjens Meyers, Kenneth Kipnis & Cornelius F. Murphy, Jr. eds. 1993). These expectations, many have observed, affirm the societal resistance to mixing economic exchange and intimacy. See, e.g., ARLIE RUSSELL HOCHSCHILD, *THE OUTSOURCED SELF: INTIMATE LIFE IN MARKET TIMES* 14 (2012) (exploring how people interact with “the commodification of intimate life”); Jill Elaine Hasday, *Intimacy and Economic Exchange*, 119 HARV. L. REV. 491, 492 (2005).

247. See, e.g., Katharine Silbaugh, *Commodification and Women’s Household Labor*, 9 YALE J.L. & FEMINISM 81, 82 (1997) (exploring the economic value of domestic labor); MARGARET F. BRINIG, *FROM CONTRACT TO COVENANT: BEYOND THE LAW AND ECONOMICS OF THE FAMILY* 1–10 (2000); MARTHA ALBERTSON FINEMAN, *THE AUTONOMY MYTH: A THEORY OF DEPENDENCY* xiii–xxiv (2004); Naomi Schoenbaum, *The Law of Intimate Work*, 90 WASH. L. REV. 1167, 1167 (2015); Meredith Johnson Harbach, *Childcare, Vulnerability, and Resilience*, 37 YALE L. & POL’Y REV. 459, 459–60 (2019).

248. Nancy Kerr, *Surprising Out of Pocket Costs for Caregivers*, AARP (Oct. 1, 2019), <https://www.aarp.org/caregiving/financial-legal/info-2019/out-of-pocket-costs.html> [https://perma.cc/HTE6-35DB].

249. See NANCY FOLBRE, *VALUING CHILDREN: RETHINKING THE ECONOMICS OF THE FAMILY* 1–7 (Frank F. Furstenberg, Jr. & Andrew J. Cherlin eds., 2008) (describing how child rearing does not fit within the economic system); LAURA KATZ OLSON, *THE NOT-SO-GOLDEN-YEARS: CAREGIVING, THE FRAIL ELDERLY, AND THE LONG-TERM CARE ESTABLISHMENT* 1–15 (2003)

The deep roots of inequality around caregiving make clear there are no easy answers. Law firms have implemented measures that attempt to help employees balance work and family. Many firms offer flexible hours or part-time status for new parents.<sup>250</sup> But accommodation of care arrangements will only go so far if the benchmarks of how one succeeds in the long term do not change.<sup>251</sup> Many of the accommodations intended to create flexibility operate, in practice, as *penalties* that have detrimental impacts on women's career advancement.<sup>252</sup> Greater state and private investments in dependent care and paid family leave, to name two often-proposed reforms, could help ease the burdens of caregiving.<sup>253</sup>

*Race.* A vital piece of the conversation about workplace equality—which is missing from the data available on patent law—is the representation and

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(describing economic costs of elder caregiving); COLLETTE V. BROWN, *WOMEN FEMINISM, AND AGING* (1998); NANCY FOLBRE, *WHO PAYS FOR THE KIDS? GENDER AND THE STRUCTURES OF CONSTRAINT* 1–11 (1994) (examining how the costs of childcare are distributed across society). The costs of caregiving are imposed forcefully on low-income women, especially low-income women of color. As Evelyn Nakano Glenn argues: “[T]he social organization of care has been rooted in diverse forms of coercion that have induced women to assume responsibility for caring for family members and that have tracked poor, racial minority, and immigrant women into positions entailing caring for others.” EVELYN NAKANO GLENN, *FORCED TO CARE: COERCION AND CAREGIVING IN AMERICA* 5 (2012).

250. Cf. Elizabeth Olson, *Law Firms Botch Parental Leave for Men, Families, Survey Says*, BLOOMBERG L. (May 11, 2021, 5:00 AM), <https://news.bloomberglaw.com/business-and-practice/law-firms-botch-parental-leave-for-men-families-survey-says> [<https://perma.cc/32CW-5KVT> (staff-uploaded, dark archive)] (reporting that 23% of large law firms offer fourteen to twenty weeks of paid paternity leave, compared with 43% that offer the same amount of time for maternity leave).

251. Indeed, a more trenchant critique of current reform strategies is that they do little to upend the markets (or the neo-liberal impulse to help those markets expand without limit) that thrive on and exploit unpaid dependency work. See Nancy Fraser, *Between Marketization and Social Protection: Resolving the Feminist Ambivalence*, in FORTUNES OF FEMINISM: FROM STATE-MANAGED CAPITALISM TO NEOLIBERAL CRISIS 227–41 (2013); see also Nancy Fraser, *Contradictions of Capital and Care*, 100 NEW LEFT REV. 99, 99 (2016) (“[The crisis of care,] [o]ften linked to ideas of ‘time poverty,’ ‘family-work balance,’ and ‘social depletion,’ . . . refers to the pressures from several directions that are currently squeezing a key set of social capacities: those available for birthing and raising children, caring for friends and family members, maintaining households and broader communities, and sustaining connections more generally. Historically, these processes of ‘social reproduction’ have been cast as women’s work . . . . Without it there could be no culture, no economy, no political organization. No society that systematically undermines social reproduction can endure for long. Today, however, a new form of capitalist society is doing just that. The result is a major crisis, not simply of care, but of social reproduction in this broader sense.”).

252. See BAGATI, *supra* note 180, at 3 (“Women lawyers perceived existing flexibility options within law firms as detrimental to their careers.”).

253. The assumption of care as an altruistic service relieves the state from responsibility to provide stronger support for families. In this regard, theorizing on vulnerability, as developed by Martha Fineman, is instructive. Vulnerability analysis “provides a means of interrogating the institutional practices that produce the identities and inequalities in the first place.” Martha Fineman, *The Vulnerable Subject: Anchoring Equality in the Human Condition*, 20 YALE J.L. & FEM. 1, 16 (2008). By describing the inevitable, constant, and universal condition of human vulnerability, Fineman argues for state action that allows people, and institutions, to build resilience to those risks. *Id.* at 9.

experience of people of color. Any account of inequality in the legal profession must acknowledge the overlapping yet distinct disadvantages of those working in a system not designed for their success,<sup>254</sup> which is particularly true for women of color.<sup>255</sup> There is currently no way to reliably code our data for the race of lawyers who argue appellate patent cases, although we are working on a methodology for doing so. But even without hard numbers, we should not lose sight of the centrality of race especially because, with its veneer of specialization, patent law and patent practice are often overlooked in the broader critiques of the racism endemic in the legal system.<sup>256</sup>

Generally speaking, women of color report negative experiences in private law practice: they are not given adequate mentorship, meaningful assignments, or networking opportunities; they are also subject to biases and stereotypes that stymie their career advancement.<sup>257</sup> Describing women as a monolithic category risks casting the experiences of white women as emblematic of all women—a blind spot and persistent limitation of U.S. feminism, as scholars of intersectionality have shown.<sup>258</sup> The limitations of our data should not bespeak

254. Tsedale Melaku writes about the “labor of invisibility,” which includes the “need to work longer or hard to get noticed and the pressure to be flawless, because the stereotypical assumption of incompetence leaves little to no margin for error.” Melaku, *supra* note 242.

255. See Mari J. Matsuda, *Looking to the Bottom: Critical Legal Studies and Reparations*, 22 HARV. C.R.-C.L. L. REV. 323, 325 (1987) (calling for scholarship that assesses “the actual experience, history, culture, and intellectual tradition of people of color in America”).

256. For legal scholarship that does consider the role of race in patent law and the patent system, see, e.g., Swanson, *Race and Selective Legal Memory*, *supra* note 150; Shubha Ghosh, *Race-Specific Patents, Commercialization, and Intellectual Property Policy*, 56 BUFF. L. REV. 409 (2008); Jordana R. Goodman, *Sy-STEM-Ic Bias: An Exploration of Gender and Race Representation on University Patents*, 87 BROOK. L. REV. 853 (2022); Jonathan Kahn, *Race-ing Patents/Patenting Race: An Emerging Political Geography of Intellectual Property in Biotechnology*, 92 IOWA L. REV. 353 (2007).

257. DOROTHY H. EVENSEN & CARLA D. PRATT, THE END OF THE PIPELINE: A JOURNEY OF RECOGNITION FOR AFRICAN AMERICANS ENTERING THE LEGAL PROFESSION 96–97 (2012); Rhode, *From Platitudes*, *supra* note 15, at 1053–56; JANET E. GANS EPNER, AM. BAR ASS’N, VISIBLE INVISIBILITY: WOMEN OF COLOR IN LAW FIRMS 10–11 (2006), <https://www.americanbar.org/content/dam/aba/administrative/women/visibleinvisibility.pdf> [<https://perma.cc/3EQS-7DN2>].

258. On intersectionality, see generally Kimberlé Crenshaw, *Mapping the Margins: Intersectionality, Identity Politics, and Violence Against Women of Color*, 43 STAN. L. REV. 1241, 1243–45 (1991) (exploring the various ways in which race and gender intersect in shaping structural, political, and representational aspects of violence against women of color); Kimberlé Crenshaw, *Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics*, 1989 U. CHI. LEGAL F. 139, 140 (“[F]or feminist theory and antiracist policy discourse to embrace the experiences and concerns of Black women, the entire framework that has been used as a basis for translating ‘women’s experience’ or ‘the Black experience’ into concrete policy demands must be rethought and recast”); Angela P. Harris, *Race and Essentialism in Feminist Legal Theory*, 42 STAN. L. REV. 581, 598 (1990) (critiquing Catharine MacKinnon’s account of rape as “masquerading as a general account”); Devon W. Carbado & Cheryl I. Harris, *Intersectionality at 30: Mapping the Margins of Anti-Essentialism, Intersectionality, and Dominance Theory*, 132 HARV. L. REV. 2193, 2200 (2019) (assessing the “critiques [of] white feminists for essentializing women as white, and for theorizing sexism from the experiences of white women”).

blindness to this problem; proposals to reform patent litigation cannot assume that all women will rise or fall equally. Indeed, the most recent report of the ABA Commission on Women in the Legal Profession demonstrates that advances for women typically help white women to a far greater extent than women of color.<sup>259</sup> Racial inequality and discrimination in the practice of intellectual property law deserves sustained attention and interventions that respond to practical and structural barriers to change.<sup>260</sup>

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We do not want to overstate the conclusions that can be drawn from the empirical demonstration of gender inequality in this Article, which is limited to one field of law practice, patent litigation, and only at the appellate level. With that disclaimer, we note that our data is consistent with a larger story about the obstacles that women and people of color face in attempting to join the upper echelons of commercial law practice and the corporate world more generally. To that end, we would be remiss if we did not briefly mention three broader proposals (tracking the three structural barriers just discussed) that would help bring greater equity to the legal field.

First, law firm power brokers should embrace defined, measurable diversity and inclusion goals and tie partner compensation and attorney advancement to the achievement of those goals. Second, caregiving time spent outside the paid labor market should be valued and rewarded both by the government and by private firms, rather than penalizing the caregiver's career and pocketbook. Finally, scholars should work towards intersectional analyses of the patent bar—both quantitatively and qualitatively—to better understand which reforms would best address persistent inequalities.

These proposals are difficult to achieve. But we hope our empirical study of patent appellate litigation underscores the importance of working to narrow gender and race gaps in high-level patent practice and beyond.

#### CONCLUSION

Appellate patent litigation is overwhelmingly the province of men. As this Article suggests, women are absent from patent appeals not because there is a paucity of women patent lawyers, but because they are not being tapped to argue on behalf of private sector litigants. Both incremental and structural change could help bring greater equity to the patent bar. Law firms, clients, and courts can take concrete steps that create additional opportunities for experience and reputation building. But simply adding women in court hearings may not

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259. PEERY ET AL., *supra* note 182, at iii.

260. See Murph, *supra* note 186, at 26–29 (describing interviews with numerous Black IP lawyers about the professional barriers they faced and have overcome).

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accomplish the deeper reforms this study's data indicates may be necessary. Rather, the culture of law practice more generally must change. That will be no easy task. Until it happens, the exclusivity of appellate patent litigation will refer not just to the Federal Circuit's jurisdiction—it will refer to the bar that practices before the court, too.

