United States Senate

WASHINGTON, DC 20510

February 13, 2023

Kathi Vidal
Under Secretary of Commerce for Intellectual Property and
Director of the United States Patent and Trademark Office
600 Dulany Street
Alexandria, VA 22314

Dear Director Vidal:

We are writing to express our concerns regarding the disproportionate challenges that small businesses,[1] women,[2] people of color,[3] and other underrepresented inventors[4] face in the patent approval process at the U.S. Patent and Trademark Office (USPTO or the Office). These challenges present these inventors with a significant disadvantage compared to Big Tech, Big Pharma, and other giant corporations.[5]

Small entities who submit patent applications have experienced lower success rates than larger companies,[6] women inventors have been less likely to have their applications accepted than men,[7] and minority inventors are less likely to receive granted patents than white inventors.[8] While the country's patent system is meant to encourage innovation, the geographic, socioeconomic, racial, and gender-based gaps in access to obtaining patent protections are

[1] Emory Law Journal, "The Inequalities of Innovation," Colleen V. Chien, April 9, 2018, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3157983.

[2] Written testimony of Barbara Gault to the U.S. Senate Judiciary Subcommittee on Intellectual Property, April 3, 2019, https://iwpr.org/wp-content/uploads/2020/10/4.2.2019-testimony.pdf.

[3] Institute for Women's Policy Research, "Tackling the Gender and Racial Patenting Gap to Drive Innovation," Elyse Shaw and Halie Mariano, July 19, 2021, https://iwpr.org/wp-content/uploads/2021/07/Tackling-the-Gender-and-Racial-Patenting-Gap_FINAL38.pdf; American Bar Association, "The Colorblind Patent System and Black Inventors," Shontavia Jackson Johnson, March 2019, https://www.americanbar.org/groups/intellectual_property_law/publications/landslide/2018-19/march-april/colorblind-patent-system-black-inventors/.

[4] Technology and Innovation, "Closing Diversity Gaps in Innovation: Gender, Race, and Income Disparities in Patenting and Commercialization of Inventions," Holly Fechner and Matthew S. Shapanka, June 1, 2018, https://www.cov.com/-/media/files/corporate/publications/2018/06/closing_diversity_gaps_in_innovation_gender_race_and_income_disparities_in_patenting_and_commercialization_of_inventions.pdf.

[5] Bloomberg Law, "Don't Let Big Tech Sabotage U.S. Innovators' Protections," Paul R. Michel and Chris Israel, April 22, 2022, https://news.bloomberglaw.com/ip-law/dont-let-big-tech-sabotage-u-s-innovators-protections.

[6] PatentlyO, "Guest post: Advancing Inclusive Innovation and Entrepreneurship through the Patent System," Colleen Chien, Jonathan Collins, Zachary J. Daly, and Rodney Swartz, November 4, 2020, https://patentlyo.com/patent/2020/11/advancing-innovation-entrepreneurship.html.

[7] Nature Biotechnology, "Gender differences in obtaining and maintaining patent rights," Kyle Jensen, Balázs Kovács, and Olav Sorenson, April 5, 2018, https://www.nature.com/articles/nbt.4120.

[8] American Business Law Journal, "An Empirical Study of Patent Grant Rates as a Function of Race and Gender," W. Michael Schuster, Evan Davis, Kourtenay Schley, and Julie Ravenscraft, June 24, 2020, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3634987; Emory Law Journal, "The Inequalities of Innovation," Colleen V. Chien, April 9, 2018, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3157983.

instead stifling advancement and growth.[9] We are seeking information from the USPTO about this troubling pattern of a gap in patent approvals that the USPTO may be further exacerbating.

In one case that highlights this gap, Katrina Parrott, a Black woman and owner of a small business, "built and launched iDiversicons, an iPhone app that allowed users to copy and paste emoji with five distinct skin tones into their messages," in 2013.[10] Despite early talks with an Apple senior director to incorporate her invention into the iPhone interface, Apple told Ms. Parrott in October 2014 that "[they] would not be working with her on the emoji project."[11] The company has since claimed "that it developed diverse skin tone emoji independently and did not copy her work."[12] Though Ms. Parrott waited over five years for the Office to approve her application – during which time she received multiple rejections, filed appeals, and provided the information requested – she ultimately did not receive a patent.[13] Meanwhile, the USPTO granted Apple 2,541 patents in 2021 alone.[14]

An inventor's first patent "is associated with investment, hiring, and economic mobility," but too often, "the applications submitted by small entity inventors don't actually turn into patents."[15] Instead, over 50 percent of new U.S. patents went to the top 1 percent of wealthiest patentees in 2020.[16]

Further evaluating the extent of the issue and implementing approaches to increase the diversity of successful patent applications requires data. But the USPTO currently "does not request or track demographic information from patent applications."[17] In October 2019, the USPTO released a report in accordance with the *SUCCESS Act*,[18] which required the Office to use publicly available data to find "the number of patents annually applied for and obtained by women, minorities, and veterans."[19] The findings revealed that "there is a limited amount of

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[9] Congressional Research Service, "Equity in Innovation: Trends in U.S. Patenting and Inventor Diversity," Emily G. Belvins, November 30, 2022, https://crsreports.congress.gov/product/pdf/IF/IF12259.

[10] Washington Post, "She brought diverse skin tones emoji to the iPhone. Now she's suing Apple." Reed Albergotti, March 10, 2021 https://www.washingtonpost.com/technology/2021/03/10/katrina-parrott-skin-tone-emoji-apple-lawsuit/.

[11] *Id*.

[12] *Id*.

[13] Correspondence with Senator Warren's Office; U.S. Patent and Trade Office, Patent Center, "15/080,533 | IDIV/0004USC01: Diverse emojis/emoticons," https://patentcenter.uspto.gov/applications/15080533/ifw/docs.

[14] AppleInsider, "Apple was the seventh largest securer of US patents in 2021," Malcolm Owen, February 14, 2022, https://appleinsider.com/articles/22/02/14/apple-was-the-seventh-largest-securer-of-us-patents-in-2021; IFI Claims Patent Services, "2021 Top 50 US Patent Assignees," https://www.ificlaims.com/rankings-top-50-2021.htm.

[15] PatentlyO), "Guest post: Advancing Inclusive Innovation and Entrepreneurship through the Patent System," Colleen Chien, Jonathan Collins, Zachary J. Daly, and Rodney Swartz, November 4, 2020, https://patentlyo.com/patent/2020/11/advancing-innovation-entrepreneurship.html.

[16] Emory Law Journal, "The Inequalities of Innovation," Colleen V. Chien, April 9, 2018, p. 8, 84, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3157983.

[17] Congressional Research Service, "Equity in Innovation: Trends in U.S. Patenting and Inventor Diversity," November 30, 2022, https://crsreports.congress.gov/product/pdf/IF/IF12259.

[18] Study of Underrepresented Classes Chasing Engineering and Science Success Act of 2018, Public Law 115-273.

[19] United State Patent and Trademark Office, "Study of Underrepresented Classes Chasing Engineering and Sciences Success: SUCCESS Act of 2018," October 2019, p. 1, https://www.uspto.gov/sites/default/files/documents/USPTOSuccessAct.pdf.

publicly available data regarding the participation rates of women, minorities, and veterans in the patent system."[20] Nevertheless, the report concluded that only 12 percent of inventors named on U.S. patents granted in 2016 were women by "infer[ring] the gender of inventor-patentees using a name-based attribution algorithm."[21]

The USPTO found even less information available that "focused on minorities,"[22] but an external 2010 study found that between 1970 and 2006, Black inventors received only 6 patents per million people compared to 235 patents per million for all U.S. inventors.[23]

Without key information and transparency, it is difficult for us to understand the true scope of the gap in patent success. But the available data reveals that it is appallingly large and does not reflect the stated values of the USPTO to "foster innovation, competitiveness and economic growth … by providing high quality and timely examination of patent and trademark applications."[24] This vast patent success gap has real-life costs, limiting opportunities for innovation and costing the nation opportunities to discover creative solutions to some of the world's biggest challenges.[25]

Although we appreciate the USPTO's previous efforts to collect demographic information in accordance with the *SUCCESS Act*, we are disappointed in the limits of this data and that it revealed a significant patent gap for women, small businesses, and inventors of color. In order to understand the USPTO's role in addressing these gaps in patent success, we request your response to the following questions by no later than February 28, 2023:

1. During the Biden Administration, what actions has the USPTO taken to improve the collection of demographic data from patent applicants?
2. During the Biden Administration, what actions has the USPTO taken to close the gaps in patent success and increase the diversity of inventor-patentees?
3. What additional information has the USPTO collected since the release of its 2019 report on the diversity of applicants and granted patents? What are the USPTO's plans to regularly report statistics on first-time, small entity, and underrepresented inventor patent activity and patent success rate?
4. What factors have created or contributed to the gap in patent success between:

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[20] *Id.*

[21] United State Patent and Trademark Office, "Study of Underrepresented Classes Chasing Engineering and Sciences Success: SUCCESS Act of 2018," October 2019, p. 2, https://www.uspto.gov/sites/default/files/documents/USPTOSuccessAct.pdf.

[22] *Id.*

[23] American Bar Association, "The Colorblind Patent System and Black Inventors," Shontavia Jackson Johnson, March 2019, https://www.americanbar.org/groups/intellectual_property_law/publications/landslide/2018-19/march-april/colorblind-patent-system-black-inventors/.

[24] U.S. Department of Commerce, "U.S. Patent and Trademark Office," https://www.commerce.gov/bureaus-and-offices/uspto.

[25] Institute for Women's Policy Research, "Tackling the Gender and Racial Patenting Gap to Drive Innovation," Elyse Shaw and Halie Mariano, July 19, 2021, https://iwpr.org/wp-content/uploads/2021/07/Tackling-the-Gender-and-Racial-Patenting-Gap_FINAL38.pdf.

a. small-entity or first-time applicants and large, repeat, and well-resourced applicants?
b. men and women?
c. racial-minority inventors and non-minority inventors?

5. How does the patent application and approval process differ between small-entity or first-time applicants versus large, repeat, and well-resourced applicants?

6. What is the correlation between a company's success rate of granted patents and:
   a. the revenue of the company?
   b. the number of patents already held by the company?
   c. the filing fees paid by the company?

7. What is the correlation between the average time it takes to examine a company's patent application and:
   a. the revenue of the company?
   b. the number of patents already held by the company?
   c. the filing fees paid by the company?

8. How much of the USPTO's budget is derived from patent filing fees?

9. Is the USPTO incentivized to approve patents from larger corporations because their frequent patent filings fund the USPTO?

10. Do any USPTO employees receive any form of compensation based on:
    a. the number of patents reviewed?
    b. the number of patents approved?
    c. the speed with which patents are reviewed?

11. How does the USPTO ensure that first-time, small, or underrepresented inventors get adequate support through the patent application process? What resources are available to first-time patent applicants to submit a successful application? How are rejections and subsequent appeals evaluated from first-time patent applicants?

12. What resources or statutory authorities does the USPTO need from Congress to reduce the gender, racial, socioeconomic, and geographic gaps in patent success?

Sincerely,

Elizabeth Warren
United States Senator

Sheila Jackson Lee
Member of Congress