Patent Public Advisory Committee
2022 ANNUAL REPORT

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PATENT PUBLIC ADVISORY COMMITTEE OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

November 1, 2022

The President of the United States
The White House
1600 Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Re: The Patent Public Advisory Committee's Fiscal Year 2022 Annual Report

Dear Mr. President:

It is my honor and privilege to present to you the 2022 Annual Report of the Patent Public Advisory Committee (PPAC) of the United States Patent and Trademark Office (USPTO). Fiscal Year 2022 has been a remarkable year – a year of significant transition for both the USPTO and the PPAC. It also has been a year of significant progress on each of the key priorities:

1. Improving the reliability and durability of the patent right;
2. Expanding the number of people who engage the U.S. patent system as inventors, particularly in under-represented constituencies and geographies; and
3. Being good financial stewards so that patent system is efficient, affordable and accessible.

Yet, there is also work to be done. The USPTO is working on new practices and policies to support the independent, micro- or small-entity inventor (collectively the Independent Inventor). It is the industry, ingenuity, aspirations, and passion of the Independent Inventor upon which the American dream and many breakthrough advances, which we take for granted today, began. As we work to expand innovation,

including in technologies key to the U.S., we must support Independent Inventors and other entrepreneurs.

Subject matter eligibility remains an area of uncertainty. The USPTO Section 101 guidance, including revisions in FY 2022, offers some needed consistency in the application of law during patent examination. The USPTO should be commended for this guidance and its *Report to Congress Patent eligible subject matter: Public views on the current jurisprudence in the United States*, but more is needed to clarify the law on subject matter eligibility. The USPTO is doing its part in providing technical comments on bills introduced in Congress, updating the guidance, and working with the court system to impart necessary clarity.

The implementation of *Arthrex* by the Director and the confines of discretionary denials of institution in AIA proceedings present complex issues of great interest to patent applicants and other stakeholders. The PPAC supports the release of the interim guidance on the Director review process in April 2022, as well as the USPTO's intent to update that guidance in view of comments received by October 19, 2022, in response to a Request for Comments (RFC) on Director review, Precedential Opinion Panel review, and internal circulation and review of Patent Trial and Appeal Board (PTAB) decisions. In addition, the PPAC appreciates that the USPTO has clarified PTAB practice regarding discretionary denial of institution of AIA review of patents based on parallel litigation (i.e., *Fintiv*), as presented in a Director memorandum released on June 21, 2022. We look forward to hearing more about the USPTO's plans to provide additional guidance in this area, as well as the USPTO's plans to issue guidance in relation to joinder in AIA cases. The PPAC also applauds the USPTO plans to address these issues more fulsomely through Advanced Notice of Public Rulemaking (ANPRM) and/or additional RFCs, which provide both the opportunity for stakeholder input and improved clarity and transparency as to USPTO practice.

In solving these and other issues facing the patent system, policymakers should not focus myopically on so-called "low quality" patents or "gaming" of the system, whether such "gaming" is carried out by opportunistic infringers, non-practicing entities, or overly zealous patent owners. The proper focus, as the USPTO recognizes, is more broadly cast – any change in law, policy, or procedure should be focused on supporting innovation for economic growth and the betterment of society. That is, the "True North" of the patent system, and all initiatives to address any perceived problem or to improve the system, should be assessed through this lens.

Improving the Reliability and Durability of the Patent Right

The highest on-going priority of the USPTO is issuing patents that are reliable and durable. That has been a goal of the USPTO and/or the Department of Commerce for many years across several administrations. Continuous improvement in this regard remains a priority. Notable progress has been made in many areas, particularly on pendency. The focus now shifts to systems within the USPTO that will strengthen quality, such as IT tools to assist with classification and search.

Further, the cost and impact of litigating patents, including in parallel forums, present challenges for innovators, particularly the Independent Inventor. The USPTO is exploring a patent small claims court and is focused on working on policy that will support the Independent Inventor.

Under the leadership of the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, Kathi Vidal, as well as the Deputy Under Secretary of Commerce for Intellectual Property and Deputy Director of the United States Patent and Trademark Office, Derrick Brent, the USPTO is poised to make significant improvement on the reliability and durability of the patent right. Their leadership, including their active engagement of the public and stakeholders, has been commendable.

Initiatives and recommendations to improve the reliability and durability of the patent right are set out in this report. However, the following are particularly noteworthy:

1. The USPTO has made notable progress in "closing the gap" between Patents (examination) and the PTAB. This has led to joint training and importantly to data sharing. Collecting the data to understand why the PTAB reaches the same or different result enables continuous improvement and should remain a priority.

2. The USPTO has effectively developed guidance on complex legal issues for examiners and practitioners to improve the consistency in the application of law. This guidance should further engage the PTAB, so that examiners and administrative patent judges are applying the law consistently from examination to a final written decision. Such guidance should include more frequent updates to the Manual of Patent Examining Procedure (MPEP) and online access to examiner training materials.

3. The USPTO's use of artificial intelligence (AI) and IT to improve classification and search is commendable. The USPTO should continue to invest in IT tools focused on improving the effectiveness and efficiency of examination. The transition to DOCX format for patent filings is particularly important in this regard.

4. The USPTO achieved its pendency goals in FY 2021. A reliable and durable patent right is timely. The USPTO should invest in the necessary resources to meet or exceed pendency goals, particularly in design patents.

5. The AIA established post-grant review (PGR) and *inter parte review* (IPR) to introduce cost effective and efficient methods to "correct" patents that should not have been issued. In practice, over 90% of AIA petitions have requested IPR and close to 85% of AIA cases also involved parallel court proceedings. Parallel proceedings add complexity and cost. The Director is developing additional guidance through an ANPRM on discretionary denials. Such guidance should seek to reduce parallel proceedings addressing the same or similar claims and grounds, encourage early correction through post-grant review (PGR), and consider the unique challenges faced by the Independent Inventor.

Expanding the Base of Innovation

The USPTO effort to expand the number of people who engage the patent system as inventors, particularly in under-represented constituencies and geographies, is critical to American competitiveness. The USPTO has made laudable progress with outreach and in establishing the Council for Inclusive Innovation to expand engagement with the patent system. The USPTO in conjunction with the Department of Commerce should define and execute plans to promote and increase access to STEM Education, promote IP-related education and increase diversity in inventorship. In order to have the data to visualize and inform decisions around innovation, entrepreneurship, and inventorship, Congress should pass the IDEA Act to allow the USPTO to collect demographic information and provide a clearer picture of who is and is not participating in our innovation and inventorship processes.

Being Good Financial Stewards

Under the leadership of the Director and Chief Financial Officer, I'm pleased to report that the finances of the USPTO are in good order. The USPTO understands that money spent by applicants on fees is money not spent on research and development and therefore seeks to be efficient, while delivering exceptional service. This report makes several recommendations relating to the finances of the USPTO. I will only highlight two as offering transformative potential to USPTO operations:

1. As the PPAC noted in our letter to Congress regarding Request and Support for the USPTO's Appropriation of Reserved Funds at Treasury, the fees collected but not appropriated should be appropriated and used for specific initiatives directed to key priorities – improving the reliability and durability of the patent right and expanding the number of people who engage the patent system as inventors, particularly in under-represented constituencies and geographies.
2. As set out in this report, Congress should expand the USPTO's AIA fee setting authority to give the USPTO discretion to decouple fee setting from entity size. This flexibility will help lower financial barriers to the Independent Inventor.

Thank you for your consideration of this report and the recommendations therein. We welcome any questions from you or your staff.

Respectfully,

Steven Caltrider
Chairperson
Patent Public Advisory Committee
U.S. Patent and Trademark Office

Enclosure: Patent Public Advisory Committee Fiscal Year 2022 Annual Report

Cc: The Honorable Richard Durbin, Chairman, Senate Judiciary Committee
The Honorable Charles Grassley, Ranking Member, Senate Judiciary Committee
The Honorable Patrick Leahy, Chairman, Subcommittee on Intellectual Property
The Honorable Thom Tillis, Ranking Member, Subcommittee on Intellectual Property
The Honorable Jerrold Nadler, Chairman, House Judiciary Committee
The Honorable Jim Jordan, Ranking Member, House Judiciary Committee
The Honorable Hank Johnson, Chairman, Subcommittee on Courts, Intellectual Property and the Internet
The Honorable Darrell Issa, Ranking Member, Subcommittee on Courts, Intellectual Property, and the Internet
The Honorable Gina Raimondo, U.S. Secretary of Commerce
The Honorable Kathi Vidal, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office

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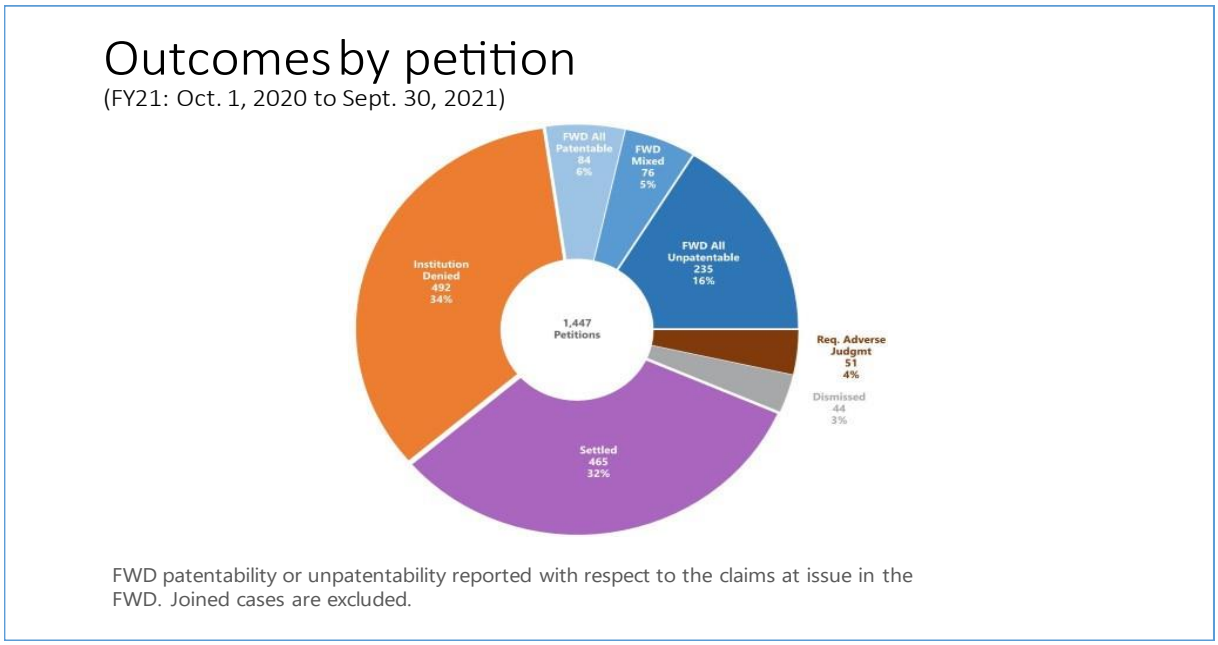
I. THE INDEPENDENT INVENTOR - INNOVATOR

In a loud and bipartisan voice, we are calling for innovation to create jobs and revenue to improve the well-being of society. To do this, not only must we engage in the outreach the USPTO is providing through its Council for Inclusive Innovation, we must also support innovators, ensure that the patent system is accessible and affordable to the Independent Inventor, and procure patents that are reliable and durable within the USPTO and beyond.

The USPTO is helping to support pro-se inventors and expanding its pro bono collaborations to offer more free legal services to more inventors seeking to file patent applications. These efforts are changing the landscape of innovation and should be commended. Whereas the number of women named on patents is between 12% and 13%, 41% of those who benefit from the USPTO's pro bono efforts identify as women, 30% identify as African-American, 14% as Hispanic, 5.6% as Asian American or Pacific Islander and 1.5% as Native American.

Of particular concern for innovators is *inter partes* review (IPR) before the Patent Trial and Appeal Board (PTAB). IPR proceedings were designed by Congress to be a less expensive alternative to district courts. However, because challengers may pursue invalidation grounds in district court and at the PTAB simultaneously, the majority of IPR proceedings have parallel proceedings in district court -- increasing rather than decreasing costs for patent holders. That is, absent a stay by the district court, which is not required by the AIA, the inventor may be forced to defend their patent in two forums, Federal district court and the PTAB, increasing the costs and burdens. The USPTO intends to address parallel proceedings in a manner that helps ensure the AIA system works as intended for all stakeholders, by revisiting and updating policy, and then formalizing any new policy through rulemaking, starting with an ANPRM.



Source USPTO

As noted in the graphic above, about a third of AIA petitions are denied institution, about a third of AIA cases terminate without a final written decision, e.g., due to settlement, and about a third result in a final written decision. Of those that proceed through to final decision, only 6% survive with all claims found valid. Patent examination will never be perfect, despite the best efforts by the USPTO. There will always be instances of newly discovered prior art, changes in law, or instances where a more fulsome record before the PTAB is the proper basis for invalidation of a previously granted patent right. Year over year, the rate in which a patent claim is found unpatentable by the PTAB appears to be dropping, which suggests issues of patentability are being identified and correctly resolved during examination. However, more improvement is needed.

Every PTAB decision finding a claim unpatentable presents an opportunity to understand and learn. Did the search during examination miss finding the prior art references? Did the PTAB and the examiner apply the law similarly (i.e., the same standard for obviousness is applied when getting a patent than protecting one at a PTAB in a post grant review)? Would additional training or other enhancements to examination result in the issuance of more robust and reliable patents, i.e., patents that withstand challenges in the future, whether in district court or at the PTAB? The USPTO is working to collect the necessary data to answer these and similar questions.

Furthermore, the USPTO should study whether the IPR proceedings could be improved at the institution phase. One area of concern is how to address any objective considerations supporting patentability. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 86 S. Ct. 684, 15 L. Ed. 2d 545 (1966). Objective considerations of non-obviousness should be considered more fulsomely at the institution phase for patents that have been copied by competitors, to mitigate the uncertainty and costs associated with a full AIA trial for those patents that cover products that provide a competitive advantage.

So called "gaming" of the system by overly aggressive non-practicing entities has received considerable political attention. The opposite end of spectrum – the opportunistic infringer – deserves equal if not more attention. While the USPTO is working to address both concerns and knows more can be done, the focus by policy makers should also be on both types of entities. Actions by each can inhibit, rather than incentivize, innovation by increasing costs and by discouraging potential new innovators from participating in the innovation ecosystem.

The Director has now met with between 50 and 100 stakeholder groups and is positioned to make meaningful change to ensure the system works for all, including Independent Inventors. While there is work to be done to improve the IP system, the PPAC appreciates and applauds the Director's listening sessions with independent inventors across the country. By understanding the needs of the inventor - innovator community, the USPTO can act on quickly to address the many issues facing this important constituency.

II. RELIABLE AND DURABLE PATENT RIGHTS AND THE PATENT TRIAL AND APPEAL BOARD

The starting point for a reliable and durable patent right is a well-prepared patent application and an examination of that application that ensures the closest prior art is considered, the examiner knows and is correctly applying the appropriate legal standards, and if the patent is challenged before the PTAB, the PTAB is in the proper role envisioned by Congress to correct an erroneously issued patent. With a reliable and durable patent right, inventors (and those that invest in patented technology) have confidence in the system and post-grant invalidity findings by the PTAB (or by a district court) are the exception, not the norm.

The PPAC is pleased to report that the USPTO is in the process of creating a robust feedback loop that will help both the patent examination function at the USPTO and the PTAB to work together. This will ensure that the USPTO continues to receive quality patent applications from innovators, and that reliable and durable patents will be granted. Below are some of the highlights of the work that was done in 2022 and plans for the future.

A. THE PATENTS (EXAMINATION) AND PTAB FEEDBACK LOOP

Over the past two years, the PTAB and Patents (the examining corps) conducted cross-surveys of *ex parte* appeals to identify ways that each business unit may enhance performance. The survey of PTAB by Patents was conducted in 2020, and the survey of Patents by PTAB was conducted in 2021. This year, the PTAB has been working to implement the feedback received from the survey. In particular, the PTAB is developing training for examiners on how to strengthen Examiner's Answers and for PTAB judges on when to administer a new ground of rejection. Both training modules should be unveiled in FY 2023. A similar study by Patents of the feedback received from the survey is expected in FY 2023.

In FY 2021, the PTAB automated the data collection of outcomes for all PTAB decisions to enable the PTAB and Patents to more easily mine the data and identify any trends, such as repeat rejections made in error in a certain technology area. The number of decisions by the PTAB using the outcome tables is significant enough that data mining is now possible, and Patents is planning to study the data in FY 2023.

The PTAB typically offers training to patent examiners on various aspects of PTAB practice on a quarterly basis. In FY 2022, the PTAB conducted two training sessions: "Q&A with PTAB Judges" and "Evaluating Common Arguments." By administering this training, the PTAB hopes to better educate examiners on various aspects of patent law and how to strengthen arguments made in Examiner's Answers to the PTAB.

While these steps are primarily focused on appeals of pending applications, it is a good start and will hopefully lead to ways in which Patents and PTAB can work together to create a feedback loop for post-grant PTAB outcomes.

B. OUTREACH TO THE INVENTOR COMMUNITY

The reliability and durability of the patent right starts with the patent application and the applicant. Accordingly, the USPTO launched several initiatives in FY 2022 to enhance outreach to the inventor community and implemented tools and services to aid inventors who appear on their own behalf before the USPTO. The USPTO created StART, a free 3-day online workshop providing training and one-on-one assistance to independent inventors in preparing and filing patent applications. The StART program is designed to empower independent inventors with the knowledge and skills required to successfully submit a nonprovisional utility patent application. The Customer Ambassador Program was created to support StART participants after the filing of their utility patent application by assisting with maneuvering the patent system. The program provides the applicant with one-on-one assistance with a highly skilled USPTO representative.

The PTAB has put into place a variety of tools to specifically assist under resourced inventors who appear before the Board. First, through PTAB websites, including one called "New to PTAB?," the PTAB offers easy to understand information and training about its proceedings, including best practices for making effective arguments. The "New to PTAB?" webpage is available in Spanish and German, and the USPTO plans to add other languages in the near future. Second, last year the PTAB created a webinar series, called "Inventor Hour," dedicated to inventor audiences to educate them about the basics of PTAB proceedings (including *ex parte* appeals, AIA proceedings, and oral hearings) and answer their specific questions. Third, working with the PTAB Bar Association earlier this year, the PTAB launched a PTAB pro bono program to offer free legal counsel to under-resourced inventors for *ex parte* appeals and anticipates expanding to AIA proceedings in the coming months. The PTAB also continues to meet with inventor organizations to gather feedback and share how USPTO is assisting inventors in navigating PTAB proceedings.

C. PENDENCY

The PPAC has noted a significant increase in application pendency overall, but more particularly the increased pendency of design patent applications. While they make up a small fraction of the total filings at the USPTO, design patents are often used as a first line of defense to combat counterfeiters and copycat products that quickly come to market on the heels of a successful product launch. Independent inventors, who cannot otherwise afford the investment required for a utility patent, often file for them. First office action pendency of design patent applications has dropped to 14.7 months (compared to 16.1 months in FY21). However, total pendency has shown a slight increase to 20.4 months (compared to 19.8 months in FY21). Other countries with similar filing numbers and which substantively examine design applications, such as the Japan Patent Office, have much shorter times to first action and overall pendency. The USPTO is actively engaged in hiring and training new design examiners to slow the increase in pendency and expects to see positive impacts over the next several years.

III. THE ROLE OF INFORMATION TECHNOLOGY AND ARTIFICIAL INTELLIGENCE

The USPTO's Information Technology (IT) systems provide the stable and resilient infrastructure critical to every aspect of the agency's work. Work that is conducted by over 13,000 employees, each of whom depend on a secure and dependable IT support 24/7. The USPTO also has been in the forefront of developing and using Artificial Intelligence (AI) to enhance IT capabilities to improve the reliability and durability of the patent right. The Chief Information Officer (CIO) and team members ensure that all aspects of the USPTO's work can be accomplished efficiently and on budget.

Therefore, it is no surprise that, in August 2022, the CIO received the CIO 100 Award on behalf of the USPTO for "using IT in innovative ways to deliver business value, whether by creating competitive advantage, optimizing business processes, enabling growth, or improving relationships with customers. It is an acknowledged mark of enterprise excellence." The USPTO was the only federal department or agency to receive this award. The PPAC congratulates the USPTO for this recognition.

This section of the PPAC Annual Report only highlights a few of the many notable achievements and accomplishments of the USPTO IT and AI Team in 2022 in service to innovators.

A. EFFORTS TO SUPPORT IMPROVING PATENT RELIABILITY AND DURABILITY

1. Accepting Structured Text (DOCX) Patent Application Filing

In FY 2022, the USPTO continues to accept patent applications filed in DOCX format, which is a uniform processing file format based on open standards, including Extensible Markup Language (XML). Filing in DOCX format is efficient, as it eliminates the need to convert structured text into a PDF. A principal benefit of filing in DOCX format is that a smart interface provides instant feedback, enabling common mistakes and errors to be detected early to prevent delays in application processing. In addition, analyzing section headings of a document filed in DOCX format allows for automatic document code detection that enables for future content reuse and delivers improved searching for patent applications and later submissions. DOCX format is supported by such common processing applications as Microsoft Word 2007, Google Docs, Office Online, LibreOffice, and Pages for Mac.

To assist applicants with filing in DOCX format, the USPTO provides free training, has delayed the implementation of a non-DOCX surcharge until January 1, 2023, and considers the DOCX file to be the authoritative source, or evidentiary copy, of the application document. Along with the training, the USPTO has eased the transition to DOCX by providing a backup PDF option that allows applicants to verify the substance of their original filing, as mentioned, in the Director's Blog: the latest from USPTO leadership.

To support USPTO's transition to filing in DOCX format, the PPAC has featured a section of each Public Meeting in 2022 to demonstrate how filing in DOCX works and to broadcast training opportunities.

For more information or to register for this free training, please visit: https://www.uspto.gov/about-us/events/patents-docx-filing

2. Providing and Training All Examiners on Patents End-To-End Search (PE2E-Search) Tools

Providing the examiner with access to prior art is essential to improving the reliability and durability of the patent right. Accordingly, in early September, the USPTO deployed the new Artificial Intelligence (AI)-based "Similarity Search" feature in the Patents End-to-End (PE2E) search suite as a tool to further assist examiners in conducting a search of the prior art. The "Similarity Search" feature receives examiner-selected application information, including the specification, as input and uses trained AI models to output a list of domestic and foreign patent documents that are similar to the patent application being searched.

In September 2022, four legacy search tools were retired. All of the approximately 8,500 USPTO Patent Examiners now have access to and have been trained on the next-generation PE2E Search Tool, which is a modern, web-based platform. The tool provides significant additional search functionalities, including access to over 76 million foreign patent filings with their English language translations. This tool will significantly expand the Patent Examiner's ability to conduct prior art searches and will enhance patent reliability and durability.

In 2022, the USPTO also has been able to substantially enhance the PE2E Search Tool by introducing Artificial Intelligence (AI) Machine Learning models that enable Patent Examiners to perform a "More Like This Document" (MLTD) search that finds documents that are similar to or most like the ones they are studying. This new AI search uses the title, abstract, claim(s), description, as well as the Cooperative Patent Classification (CPC) i.e., the patent classification system jointly developed with the European Patent Office, and examiner citation data to calculate similarity. The USPTO also is working on other AI-based tools to further assist Patent Examiners to retrieve potentially relevant prior art for consideration.

To support USPTO's continued effort to leverage AI to improve patent reliability and durability, at the PPAC Public Meeting in August 2022, the first public demonstration of the MLTD Search capability was previewed.

For more information on the ground-breaking MLTD search capability, please visit:
https://www.uspto.gov/web/offices/com/sol/og/2022/week02/TOC.htm#ref10

3. Using AI to Augment CPC Auto-Classification

Examination is also improved by getting the application to the examiner best positioned to examine the application over the art. For this reason, in 2022, the USPTO introduced a CPC auto-classification that utilizes AI to identify CPC symbols associated with claimed subject matter in utility applications. This allows the USPTO and Patent Examiners to better identify the claimed subject matter of the patent application. The USPTO is currently exploring additional applications where CPC auto-classification can be further leveraged.

For more information on patent classification, please visit:
https://www.uspto.gov/patents/search/classification-standards-and-development

IV. INNOVATION EXPANSION

In the 1970s, the U.S. accounted for roughly 70% of global research and development (R&D). Today, the U.S. accounts for only 16%, well below China's 25%. The National Science Board recently reported that in addition to lagging behind China in R&D output, from 2010 to 2020 the U.S. share of international patenting dropped from 15% to just 10%. In contrast, China's share of international patents increased from 16% in 2010 to 49% in 2020. So how can we compete with China and other nations focused on innovation? We first need to acknowledge that the world is embroiled in a global innovation race.

Both countries and companies have recognized that innovation is a clear driver of national competitiveness, which is defined as economic and technological competitiveness, and national security. To maintain or enhance national competitiveness we need to focus on bringing more and different innovations and innovators into the system. But how do we know who is and isn't participating in the innovation ecosystem? Patent data. Patent data, combined with demographic data, can help us visualize who is and isn't participating in the ecosystem. It can also help focus efforts on how to reach and attract underrepresented inventors into the innovation ecosystem. We can enhance our economic and technological competitiveness by focusing on ensuring inclusion in innovation and invention processes for all future innovators.

The idea that focusing on inventors and patent data can help move national GDP, seems at first glance to be farfetched. Yet according to Professor Lisa Cook, a former Edison Fellow for the USPTO and current member of The Board of Governors for the Federal Reserve, "if we quadruple the number of inventors, we could increase the overall level of U.S. GDP by up to 4.4%. For some reference, 4.4% of the $23 Trillion U.S. GDP in 2021 represents about $1 trillion in potential annual growth to the U.S. economy." The only way we can quadruple the number of inventors in the innovation ecosystem is to bring in inventors who are currently not participating or are participating at a low rate in the innovation and inventorship ecosystem. The USPTO Progress and Potential report on gender diversity in patenting helped shine a light on the underrepresentation of women in both the innovation and inventorship processes within the U.S. Additionally, national patent data shows that 80% of patents are held by corporations. Industry initiatives such as The Diversity Pledge seek to help companies obtain and analyze their binary gender patent data to help us to visualize who is participating (and more importantly who is not) in the innovation processes within the corporation. Organizations should be empowered to measure their own progress in fostering equal access to innovation along each stage of the pipeline. Paramount in these efforts are introspective identification of objectives and benchmarks, analysis of gaps, effective data collection, and establishing methods for incorporating feedback and change. From there, companies can address the issues that have precluded women and minorities from full participation.

Expanding innovation begins with creating innovators by educating students of all ages in patent-intensive fields such as STEM disciplines and complementary skills sets, then creates environments where those graduates can use their skills to develop their ideas, and culminates with expanded access to resources that allow them to profitability commercialize their inventions. Not surprisingly, there is no one overarching issue, but many different issues that prevent full participation of women in the inventorship and innovation processes; lack of mentoring, lack of education about IP and the inventorship process, to name a few. Often, women don't think of themselves as an inventor, rather they think of themselves as solving an

immediate problem which they believe does not rise to the level of invention. Patenting happens in their off-work hours and many are too tired due to other family demands (especially during the COVID pandemic). Biased decision processes also may play a role, and many more. As companies work to learn and to address these issues, they have seen some startling early results. David Dutcher, Chief IP Counsel for Western Digital, in a recent article discussing root causes of underrepresentation says "mentoring programs increased female invention disclosures 26% and that retaining talent, employee know-how and patenting innovation is increasingly important as the semiconductor shortage continues".

To help understand how these initiatives can be scaled nationally, Meta and Lenovo recently announced their gender inventorship numbers:

Meta's numbers:

- Women represented 24.8% of Meta's workforce in tech roles (see Meta's 2022 Diversity Report). For calendar year 2021, the inventorship rate for Meta's female inventors was 17.6%.

Lenovo's numbers:

- Women represented 26.4% of Lenovo's workforce in technical roles (see most recently published numbers in Lenovo's 2020 D&I Report). For calendar year 2021, the inventorship rate for Lenovo's female inventors was 17.4%.

As you can see, women inventors are participating well below their representation in the technical workforce. Meta and Lenovo are examples of this issue across all companies in the U.S., however unlike Meta and Lenovo, most companies have either not calculated their women inventor rate, or would not make that number public. Bringing more women into the innovation and inventorship ecosystem at scale can unleash a tidal wave of innovation within our economy that would be unprecedented. It is worth noting that women are only one group of underrepresented inventors (URIs). Other URIs consist of veterans, people with disabilities, traditionally under represented ethnicities, LQBTQ+, geographic areas, and more. Focusing on inclusivity will have the same effect, if not more so, than President Kennedy's moonshot efforts had on overall innovation to the U.S. economy.

Individual inventors are not immune to the challenges of engaging the patent system. The USPTO supports 21 pro bono regions across the country as part of the USPTO's Patent Pro Bono Program. Adding USPTO assistance to participating regional patent pro bono programs on plans to expand their work, including by infusing more funding into their programs, allows them to help even more innovators. By meeting people where they are, we support a wider swath of Americans including more veterans, those having a lower socio-economic status, those outside of technology hubs, and those who have traditionally not had access to the innovation ecosystem.

The USPTO also supports individual inventors through the law school clinic certification program which allows applicants to obtain pro bono legal assistance in both patent and trademark matters while allowing law students enrolled in a participating law school's clinic program to practice intellectual property law before the USPTO under the strict guidance of a law school faculty clinic supervisor. The USPTO has welcomed five new law schools this year as participants in the patent and/or trademark law school clinic programs: George Mason

University, Case Western University, Wake Forest University, University of Michigan Law School, and Brigham Young University

Whereas approximately 13% of named inventors on U.S. patents are women, 41% of Patent Pro Bono Program applicants who responded to a survey in 2021 identified as women. In addition, 30% identified as African American, 14% as Hispanic, 5.6% as Asian American or Pacific Islander and 1.5% as Native American. These statistics highlight the need to find the "Lost Einsteins" and bring them more fully into our innovation ecosystem.

America's long-standing economic prosperity and global leadership in innovation depends on first ensuring a level playing field for all Americans to create and protect their inventions. As a nation we also need every demographic to innovate, and to seek strong and reliable patents where appropriate, to secure protection for their inventions and reap the associated rewards from those efforts.

V. BEING GOOD STEWARDS: FINANCE

Under statute, the responsibilities of the PPAC on finance include reviewing the performance, budget, and user fees of the USPTO with respect to patents. In this section, the PPAC reviews USPTO access to collected user fees; USPTO fee funding model; USPTO fee setting; USPTO FY 2022 financial performance; and, USPTO FY 2023 budget.

A. USPTO ACCESS TO COLLECTED USER FEES

The USPTO is fully funded by user fees and only user fees. Each year, during the federal budget process, the USPTO is typically appropriated its estimated annual collection of user fees by Congress. Given the inherently uncertain nature of estimates, the USPTO collects user fees that exceed its appropriations at times. The PPAC comments here on the disposition of collected user fees that exceed appropriations.

1. Excess Fees Collected Before the America Invents Act

Before the passage of the America Invents Act (AIA), any collections of user fees beyond appropriations were placed into a USPTO account at the U.S. Department of the Treasury. As of this Annual Report, this account – classified as "previously collected but temporarily unavailable funds" – has a balance of approximately $1 billion.

2. Excess Fees Collected After AIA

After the passage of the AIA, any annual collections of user fees beyond the annual appropriation are placed into the USPTO Patent and Trademark Fee Reserve Fund (PTFRF). The USPTO is typically granted access to the funds in the PTFRF upon request to Congress; these funds are then placed into the operating reserve (OR), i.e., cash on hand.

In the view of the PPAC, maintaining the OR at a sufficient level – two to three months of expenses – is crucial for the continued financial wellbeing of the USPTO. Indeed, the USPTO can use an OR at this level to weather any unexpected changes in financial conditions, such as a continuing resolution appropriation at the prior year's level or even a lapse in appropriation. Currently, the USPTO projects that the OR at year end of FY 2022 will equate to more than two months of operating expenses. The PPAC feels that this level is sufficient.

B. USPTO FEE FUNDING MODEL

The USPTO has established a unique fee funding model. More specifically, the USPTO has set its entry fees (that is, its fees for filing, search, and examination of patent applications) artificially low, below the USPTO cost to perform these activities. The setting of entry fees below cost encourages entry into the patent system by all applicants, including small businesses and solo inventors. The cost of entry into the patent system is subsidized by the payment of issue fees and post-issue maintenance fees, both of which are set above the USPTO aggregate cost to perform these activities. Indeed, for an undiscounted application, the USPTO does not recover its aggregate costs for reviewing a basic application and issuing a patent until payment of the second maintenance fee. For this fee funding model to be sustainable, it is crucial that users continue to pay issue fees and maintenance fees.

The PPAC has reviewed the fee funding model and endorses it wholeheartedly. In the view of the PPAC, reducing the fee barrier to entry into the patent system promotes diversity, equity, and inclusion in innovation.

The PPAC has discussed with the USPTO whether recent economic developments may pose challenges to the sustainability of the fee funding model. More specifically, the PPAC has queried the USPTO whether it has observed any meaningful decreases in the rate of filings, the rate of payment of issue fees, or the rate of payment of maintenance fees. The USPTO has confirmed that no such changes have been observed over the past year.

Additionally, the PPAC has queried the USPTO on its procedure for identifying potential patent filing fraud. Patent filing fraud diverts resources away from legitimate filings. The USPTO has advised the PPAC that it has robust diligence procedures in place to identify anomalies in patent filings. Indeed, the USPTO has identified patent filing fraud ranging from improper (e.g., "copied") filings (especially in e-commerce related design patent filings) to improper certifications of eligibility for micro entity status. The PPAC recommends that the USPTO continue to remain diligent in identifying and remedying patent filing fraud for the benefit of all legitimate filings.

C. USPTO FEE SETTING

1. Statutory Authority

The USPTO has three different types of statutory authority for setting its fees. The broadest type of authority is provided by AIA; this authority permits the USPTO to set or adjust any fee after notice to and comment from the PPAC and the public. A narrower type of authority is CPI-based. More specifically, the USPTO can adjust any fee specified by statute to reflect increases in CPI; a small number of fees are set by statute. The narrowest type of authority is unit cost-based. The USPTO can set or adjust any fee to recover its individual unit costs; a very small number of fees have been set in this way.

While the USPTO has three different types of fee setting authority, the USPTO relies primarily upon its AIA fee setting authority to ensure the sustainability of its fee funding model. However, its AIA fee setting authority is time limited: the authority was initially granted by the AIA for seven years (i.e., to September, 2018) and extended by the SUCCESS Act for eight years (i.e., to September, 2026).

The PPAC emphasizes to Congress that continuing grants of AIA fee setting authority are necessary to ensure the sustainability of the USPTO fee funding model – the USPTO has insufficient CPI-based and unit cost-based authority to ensure sustainability. Moreover, the PPAC reminds Congress that it is this very same model that facilitates entry into the patent system by all applicants, including small businesses and solo inventors. Without continuing grants of AIA fee setting authority, the USPTO could find itself in the untenable position of having to engage in a fee setting activity to recover its aggregate costs – but without the statutory authority to do so. The USPTO would then need to request an appropriation of taxpayer funds from Congress.

Additionally, the PPAC recommends that Congress expand the USPTO's AIA fee setting authority to give the USPTO discretion to decouple fee setting from entity size. As brief background, the fee an applicant pays to the USPTO for a given service varies based on entity

size, i.e., large, small, or micro. Under the USPTO's current AIA fee setting authority, the USPTO can set or adjust the fee charged for a service after the appropriate regulatory procedure is followed. However, the USPTO must set or adjust the fee in the same manner for all entity sizes – meaning that any increase in the fee will apply to all entity sizes. If the USPTO had the authority to decouple fee increases from entity size, the USPTO could potentially increase the fees charged only to large entities, for example, without having to also increase the fees charged to small or micro entities. Such an authority would help the USPTO maintain the sustainability of its fee funding model while simultaneously reducing the financial barrier to entry into the patent system for small and micro entities.

2. Activities

Given its AIA fee setting authority, the USPTO receives net zero appropriations from Congress; it does not receive any taxpayer funding. Accordingly, the USPTO must cover all expenses with collected user fees and only collected user fees. Also, under the AIA, the USPTO can set its fees only to recover its costs in the aggregate: the USPTO cannot turn a profit. The USPTO engages in AIA fee setting activities periodically to ensure the office recovers its aggregate costs (and only its aggregate costs) with user fees.

a. FY 2022

As of this Annual Report, the USPTO has not engaged in any fee setting activity in FY 2022.

b. Future Years

Based on current projections, the USPTO expects to engage in an AIA fee setting activity sometime within the next two to three years to maintain the sustainability of its fee funding model and an optimal level of the OR. Currently, the USPTO has adequate funding for its near-term anticipated initiatives to improve the patent system. But, the USPTO expects its near-term costs will increase due to increases in cumulative pay rates for its personnel, inflationary pressures, and other routine factors. These increased costs will reduce the OR below an optimal level, thereby necessitating an AIA fee setting activity. The PPAC looks forward to working with the USPTO on this AIA fee setting activity.

D. REVIEW OF USPTO FY 2022 BUDGET PERFORMANCE

The PPAC lauds the USPTO for its FY 2022 budget performance. As of this Annual Report, the USPTO is experiencing an uneventful financial year, which is ideal from a financial perspective. The PPAC has learned that the USPTO does not expect any meaningful decreases in application filing rates, issue fee payment rates, or maintenance fee payment rates, any of which could affect the sustainability of the fee funding model. The PPAC has also learned that the USPTO has considered whether changes in these rates may be on the horizon given changes in economic conditions. The USPTO has advised the PPAC that filing rate changes (and other payment rate changes) lag economic changes by six to twelve months – and, in any event, are historically small, low single-digit percentage changes that are easy to accommodate.

The PPAC has learned that the patent business line of the USPTO spent below its revenue collections, which led to an increase in the OR. Indeed, the OR was at its highest historical level at the end of FY 2022. As previously mentioned, this level of OR will help the office weather any unexpected changes in financial conditions.

E. REVIEW OF USPTO FY 2023 BUDGET

The PPAC has reviewed the USPTO FY 2023 budget and endorses it without reservation. The PPAC is confident that the OR will be at a sufficient level to ensure smooth financial operations of the USPTO during any continuing resolution appropriation at the prior year's level or delay in appropriation.

VI. OTHER NOTABLE INITIATIVES

As part of this advisory role to Congress, the USPTO has focused on transparency, internal collaboration, and stakeholder feedback for developing its policy responses. The PPAC has worked closely with the Agency on these initiatives, in particular to facilitate the USPTO's ability to solicit feedback from relevant stakeholders and respond to inquiries and developments from Congress.

A. LEGISLATIVE ACTIVITY

Congress has continued to be active on patent issues during the second session of the 117th Congress. Congress has been actively focused on patent quality issues, post-issuance patent review proceedings, increasing inventor diversity and drug pricing issues. Such bills include S. 4707, the Patent Examination and Quality Improvement Act of 2022; S. 4430, the Interagency Patent Coordination and Improvement Act of 2022; S. 4417, the Patent Trial and Appeal Board Reform Act of 2022; S. 632, the Inventor Diversity for Economic Advancement (IDEA) Act of 2021; H.R. 5796/S. 4210, the Patents for Humanity Improvement Act; and S. 4737, the Patent Eligibility Restoration Act of 2022.

The USPTO actively monitors these bills and provides regular updates to PPAC members on Congressional activity, including legislation and Congressional hearings.

During the second session of the 117th Congress, the Senate Judiciary Subcommittee on Intellectual Property and the House Judiciary Subcommittee on Courts, Intellectual Property and the Internet held hearings that addressed post-grant proceedings at the Patent Trial and Appeals Board (PTAB). In June, the Senate Judiciary Subcommittee on Intellectual Property held a hearing to discuss pending legislation addressing PTAB (The Patent Trial and Appeal Board: Examining Proposals to Address Predictability, Certainty, and Fairness (June 22, 2022)). The House Judiciary Subcommittee also held hearings on PTAB, with the first hearing in June addressing the impact of the PTAB on small businesses and innovation (The Patent Trial and Appeal Board After 10 Years: Impact on Innovation and Small Businesses (June 23, 2022)) and the second hearing in July that addressed the preliminary findings of an ongoing Government Accountability Office investigation of the PTAB (The Patent Trial and Appeal Board After 10 Years, Part II: Implications of Adjudicating in an Agency Setting (July 21, 2022)). While the USPTO did not provide a witness for the hearings, the Director did submit a letter to the House Judiciary Subcommittee for the latter hearing outlining recent and ongoing initiatives at the PTAB.

B. CONGRESSIONAL INQUIRIES AND OUTREACH

During this second session of the 117th Congress, Congress has sent inquiries to the USPTO on a wide range of patent issues touching on patent quality; post-grant review proceedings at the PTAB, including data related to those proceedings; interagency coordination; and the U.S. intellectual property system generally. Specifically, Members of Congress have inquired about discretionary denial of institution of *inter partes* review proceedings and potential abuses of post-grant proceedings; drug pricing issues, including those relating to coordination between the USPTO and the FDA; the accuracy of the data used in discussions around the role patents play in drug pricing; continuations practice; whether a patent small claims court should be established;

whether the U.S. should establish a unified intellectual property office; and the role and effect of non-fungible tokens on the U.S. intellectual property system.

To respond to these inquiries, the USPTO often solicits stakeholder views. For example, in response to a request from Sens. Tillis, Coons, Cotton and Hirono, the USPTO issued a report on the public views on the economic effect of the current jurisprudence on Section 101 in June 2022. The report provides Congress important information from the public around the current state of the law around patent subject matter eligibility. The Agency also conducts its own internal studies.

The USPTO regularly shares new and updated information around initiatives and procedures at the USPTO. Recently, the USPTO shared updated interim guidance and processes around PTAB practice in response to Congressional inquiries and with the leadership of the House Judiciary Subcommittee on Courts, Intellectual Property and the Internet prior to its hearing on this subject.

C. STAKEHOLDER OUTREACH AND PPAC INVOLVEMENT

As noted above, the USPTO has focused on stakeholder outreach as a component of responding to these legislative developments and inquiries. The PPAC has been closely involved in these efforts in the following ways, among others.

First, PPAC members provide the Director with their thoughts and comments on these Congressional inquiries and legislative proposals based on their own unique perspectives, backgrounds and experiences. This feedback helps inform the Director as she considers the questions and issues posed by these Congressional letters and pending legislation.

Second, the USPTO uses requests for comments and information, published in the Federal Register, to solicit public feedback on policy developments where such feedback is especially valuable. The Director recently announced that several such requests for comments are forthcoming. The PPAC has worked closely with the USPTO to ensure that these requests reach the right audiences and ask questions that will prompt useful perspectives in comments.

Third, the USPTO holds meetings and events, inviting stakeholders to interact with leadership, examiners, the PTAB, and others at the agency. The PPAC has assisted the USPTO in organizing several of these events. Exemplary of this is the recent Artificial Intelligence (AI) and Emerging Technology (ET) Partnership, an agency-wide initiative announced in June 2022. In support of the National AI Initiative, the AI/ET Partnership seeks to engage with academia, independent inventors, small businesses, industry, other agencies, and civil society. The AI/ET Partnership provides an opportunity to bring these stakeholders together to share perspectives, experiences, and insights, and foster opportunities to collaborate on the intersection of intellectual property, AI, and ET. An inaugural AI/ET Partnership event was held on June 29, 2022, and the USPTO regional offices are working to foster engagement on AI/ET issues in their respective geographic regions.

D. INTERNATIONAL

Among the notable efforts by the USPTO on the international stage were becoming a technology partner to the global green-technology platform of the World Intellectual Property Organization (WIPO) and the Memorandum of Understanding with WIPO Concerning Dispute Resolution in the Area of Standard Essential Patents.

On the margins of the 2022 WIPO Assemblies, the USPTO became a partner to the global green-technology platform of WIPO, called WIPO GREEN. WIPO GREEN is a public-private partnership established by WIPO in 2013. Its 146 international partners include major technology companies, intellectual property (IP) offices, business groups, research institutes, and nongovernmental organizations. The partnership (1) provides an online platform for technology exchange, connecting providers and seekers of environmentally friendly technologies, and (2) organizes acceleration projects, conferences, and international events that highlight the availability of green technologies. The USPTO's contributions to WIPO GREEN include its own initiatives that are designed to address the challenge of climate change, including:

- The USPTO Climate Change Mitigation Pilot Program, which accelerates the examination of patent applications involving innovations to reduce greenhouse gas emissions; and
- The upcoming Patents for Humanity: Clean Energy Technologies awards competition, a green technology–focused version of the USPTO's highly successful Patents for Humanity awards competition.

In July of 2022, the USPTO and WIPO signed a memorandum of understanding ("MOU") to undertake joint efforts to bring awareness to services provided by WIPO relating to dispute resolution involving standard essential patents (SEPs). SEPs are patents that have been declared essential to a given technical standard. As part of the standards-setting process, patent owners may agree to license SEPs on fair, reasonable, and nondiscriminatory (FRAND) terms. Standards touch all aspects of modern life and include video compression, wireless communication technologies, computer connection standards, automotive technology, and more. Under the terms of the MOU, the USPTO and WIPO will cooperate on activities that will lend efficiency and effectiveness to the resolution of disputed standard essential patent matters by leveraging existing WIPO Arbitration and Mediation Center and USPTO resources. They will also engage in stakeholder outreach to raise awareness of the services provided by the WIPO Arbitration and Mediation Center through joint USPTO-WIPO programs.

a. "U.S. Patent Phrase to Phrase Matching" Competition (Worldwide, March–June 2022)

AI presents novel problems of sourcing and validating ideas because of its unique nature, often highly-experimental. Therefore, in 2022, the USPTO reached out to the public AI research community to launch an inaugural worldwide AI competition using annotated USPTO Open Data and quantitative benchmarking. Through this competition, over 2,300 researchers and engineers from 85 countries volunteered to tackle the objective of extracting semantic meaning from technical language in patent documents. The competition yielded almost 43,000 proposed potential solutions in AI source code, with the winning solution achieving an almost 88% accuracy on the evaluation benchmark.

This USPTO initiative established that a cooperative international effort to use quantitatively benchmarked research competition can attract the "best and brightest" to achieve new AI solutions and bodes well for USPTO led efforts of this kind in the future.

At the August 2022 PPAC Public Meeting, the CIO and Director of Emerging Technology made an informative presentation about this Competition which culminated in an official announcement of results in Madrid, Spain earlier in the summer.

For more information on the Competition, please visit:
https://www.kaggle.com/competitions/us-patent-phrase-to-phrase-matching/overview

b. USPTO/UKIPO "Best Practices for Search and Enforcement Capabilities" Oxford, England - August 2022

In Oxford, England, the CIO met with the UKIPO Counterpart to establish a closer working relationship in the areas of patent validation and enforcement and learned more about the effort in England to utilize their police force to combat fraud and ensure enforcement of their IP Counter-Infringement Strategy.

For more information, please visit:
https://www.gov.uk/government/news/ipo-launches-new-strategy-to-address-ip-crime-and-infringement

E. EXPANDING INNOVATION WITHIN THE USPTO

The CIO's initiation of a "Cloud Smart Strategy" has continued to reduce the data center's physical footprint, reduce costs, increase resilience and energy use, by focusing on a "Fit for Purpose" approach to deliver best value to the USPTO by evaluating where it makes "business sense," without sacrificing security. Public Cloud usage has greatly expanded as a result, improving hybrid cloud infrastructure, enhancing security, and achieving cost management efficiencies.

The "Cloud Smart Strategy" also has improved the Patent Examination Data System by using a cloud-based solution to launch and achieve parity plus in Event Hub, increasing stability, resilience, performance, and image conversion with reduced stabilization costs.

In addition, the USPTO also has continued to increase public awareness of cloud presence through education and outreach to all stakeholders.

For more information on the Cloud journey, please visit:
https://www.uspto.gov/sites/default/files/documents/PPAC-OCIO-update-20220310.pdf

VII. SUMMARY OF RECOMMENDATIONS

The PPAC makes the following recommendations to build upon the work that has been done and is currently being undertaken.

A. QUALITY AND DURABILITY OF THE PATENT RIGHT

1. The PPAC continues to recommend that the USPTO use each PTAB decision finding a claim unpatentable as an opportunity to understand and learn. This "feedback loop" between PTAB and Patents should be embedded into the USPTO quality systems.
2. The PPAC recommends that the Director study how the objective considerations for non-obviousness in those cases of post grant reviews of patents that claim products providing a competitive advantage and have been copied by competitors can be considered more fulsomely at the institution phase. The USPTO should consider whether to deny institution of these challenges in order to mitigate opportunistic copiers.
3. PPAC recommends that the USPTO commit to more frequent updates to the Manual of Patent Examining Procedure (MPEP) on which patent examiners and patent practitioners rely for consistent patent examination. The last update was in June of 2020. In between MPEP updates, the USPTO should provide updated examiner training materials to the public on the USPTO website. This alignment of information available to both examiners and practitioners, particularly on case law updates, would no doubt have a positive impact on the quality of patent applications and their examination.
4. The Director should develop additional guidance on discretionary denials, vetting through a Federal Register notice.
5. While the PPAC understands that efforts are being made to hire and train more design examiners to help reduce the increasing pendency, it also encourages the USPTO to consider tools that would enable more efficient examination and grant of design patent applications, such as AI search capabilities (which are only available to utility examiners currently) and electronic publishing of granted design patents.
6. The USPTO should consider additional ways (other than increased fees) to encourage the public to use DOCX including change management principals. Fees introduce additional barriers to entry for under resourced inventors.
7. The PPAC recognizes that it requires a cautious weighing of many factors such as the correct and efficient operation of the examination process, the durability and reliability of issued patents, and the accessibility of the patent system to all potential innovators. Accordingly, the PPAC recommends that the USPTO continue to engage with the public and solicit stakeholder feedback as part of the Agency's role as advisor on intellectual property policy.
8. The PPAC recommends that the USPTO continue to engage with Congress on intellectual property issues, in fulfillment of the statutory role of the Agency. In doing so, the PPAC recommends that the USPTO continue to expand its current approach and find new ways of reaching out to stakeholders on policy issues. The PPAC will continue to provide its own

input on legislative and policy matters, and it is honored to serve as a conduit through which members of the public can voice ideas and feedback to the Agency.

B. EXPANDING INNOVATION IN AMERICA

9. The USPTO in conjunction with the Department of Commerce should define and engage a national IP and Innovation ecosystem on promoting and increasing access to STEM Education, promoting Intellectual Property Education, and increasing diversity in Inventorship

10. In order to use patent data to visualize and inform decisions around innovation, entrepreneurship, inventorship Congress should pass Senator Hirono's IDEA Act to enhance the office's ability to collect demographic information and provide a clearer picture of who is and is not participating in our innovation and inventorship processes.

C. FINANCIAL

With regard to fees and funding, the PPAC believes that fees should be used for the purpose for which they were intended. Accordingly, the PPAC has the following recommendations for the USPTO and Congress.

11. The USPTO should determine how previously collected but temporarily unavailable funds can be used to improve the reliability and durability of the patent right and expand diversity, equity, and inclusion in innovation. Once the USPTO has made this determination, the USPTO should request an appropriation of these funds from Congress at the next convenient opportunity. The USPTO should identify in its request the specific purposes for which the funds will be used.

12. Upon receiving a specific request from the USPTO, Congress should appropriate these funds to the USPTO. Preferably, Congress should make the appropriation outside of normal budget scoring, so that the appropriation will not adversely affect the appropriation to any other federal agency. The PPAC recognizes that an appropriation outside of budget scoring is unusual. As support for this recommendation, the PPAC reminds Congress that these funds represent fees collected from users for the benefit of operations of the USPTO, and they should be used as such.

13. In addition, the PPAC recommends that the USPTO continue to diligently monitor the rates of filing, payment of issue fees, and payment of maintenance fees to ensure the continued sustainability of the fee funding model.

14. The PPAC recommends that Congress appropriate the USPTO its estimated annual fee collections as requested in the Biden Administration's FY 2023 budget and as required by the AIA.

15. The PPAC recommends that Congress grant AIA fee setting authority on a permanent basis or for another seven or eight years (for consistency with the grant periods under the AIA and the SUCCESS Act).

16. The PPAC recommends that Congress expand AIA fee setting authority to give the USPTO discretion to decouple fee setting from entity size.

GLOSSARY OF ABBREVIATED TERMS

ABBREVIATION	DEFINITION
AI	Artificial Intelligence
AIA	Leahy-Smith America Invents Act
ANPRM	Advance Notice of Proposed Rule Making
CIO	Chief Information Officer
CPC	Cooperative Patent Classification
CPI	Consumer Price Index
ET	Emerging Technology
FDA	U.S. Food and Drug Administration
FRAND	Fair, Reasonable, and Nondiscriminatory
GDP	Gross Domestic Product
IDEA	Inventor Diversity for Economic Advancement
IPR	*Inter Partes* Review
IT	Information Technology
JPO	Japan Patent Office
MLTD	More Like This Document
MOU	Memorandum of Understanding
MPEP	Manual of Patent Examination Procedure
OR	Operating Reserve
PE2E	Patents End-to-End
PGR	Post-Grant Review
PPAC	Patent Public Advisory Committee
PTAB	Patent Trial and Appeal Board
PTFRF	USPTO Patent and Trademark Fee Reserve Fund
RFC	Request for Comments
SEPs	Standard Essential Patents
StART	Stakeholder Application Readiness Training
SUCCESS	Study of Underrepresented Classes Chasing Engineering and Science Success
UKIPO	United Kingdom Intellectual Property Office
URI	Underrepresented Inventors
USPTO	United States Patent and Trademark Office
WIPO	World Intellectual Property Organization
XML	Extensible Markup Language

STEVEN CALTRIDER, CHAIR

Mr. Caltrider is Chief IP Counsel of the Dana Farber Cancer Institute (DFCI) and retired Vice President and General Patent Counsel for Eli Lilly and Company. His passion is creating and enforcing IP to enable life-saving innovation to reach patients. He has extensive litigation experience in the leading intellectual property (IP) forums (more than 30 countries), including U.S. Federal District Court, the U.S. Courts of Appeals for the Federal Circuit; courts in Canada, the United Kingdom, Germany, Japan and the Netherlands; as well as the USPTO, EPO, and JPO. Mr. Caltrider is experienced in managing global teams of attorneys and staff on a wide range of IP matters, from patent procurement to technology acquisitions and data security. Mr. Caltrider is also Chair-Elect of the American Bar Association Section of Intellectual Property. Mr. Caltrider received a bachelor's degree in chemical engineering from Purdue University and a law degree, summa cum laude, from the Indiana University Robert H. McKinney School of Law. Mr. Caltrider is serving his second term and 5th year as a PPAC member.

TRACY-GENE DURKIN, VICE CHAIR AND PQUIP SUBCOMMITTEE CHAIR

Ms. Durkin is the practice leader of the Mechanical & Design Practice Group and a member of the Trademark & Brand Protection Practice at the law firm of Sterne, Kessler, Goldstein & Fox P.L.L.C. in Washington, D.C. She has extensive experience in design patent law and the enforcement of intellectual property rights. In 2018, Financial Times named her as one of the "Top Ten Legal Innovators in North America," noting her as "a leading authority on design patents. Ms. Durkin began her career as a patent examiner at the USPTO. Now, with more than thirty years of experience in private practice obtaining and enforcing intellectual property rights, she is sought out by leading consumer product companies and by colleagues around the world for her deep understanding of utility and design patents, trademarks, and copyrights. Ms. Durkin has represented companies before Federal District Courts, the United States Court of Appeals for the Federal Circuit, the International Trade Commission, the USPTO Patent Trial and Appeal Board, and Trademark Trial and Appeal Board. She has served as an expert witness in patent disputes in District Court litigation, and before the International Trade Commission. A leader in the legal community, Ms. Durkin is a past president of the Women's Bar Association of the District of Columbia and of The Women's Bar Association Foundation, two organizations in which she continues active participation. Ms. Durkin is serving her first term and 3rd year as a PPAC member.

JEFF SEARS, FINANCE SUBCOMMITTEE CHAIR

Mr. Sears serves as Associate General Counsel and Chief Patent Counsel for Columbia University. His practice encompasses all aspects of patent law, including prosecution, strategic counseling, licensing and post-licensing compliance, litigation, and legislative, regulatory, and policy matters. He manages the university's global patent portfolio and works closely with faculty inventors, technology transfer officers, and executive leadership on commercialization activities. Also, Mr. Sears is an Adjunct Professor at Columbia's School of Engineering and Applied Science, where he co-teaches Intellectual Property for Entrepreneurs and Managers. He has been recognized for his work in intellectual property law and management and has multiple awards and honors, including having been named to the IAM Strategy 300 by IAM Media and Corporate IP Stars by Managing Intellectual Property Magazine. Mr. Sears holds an S.B. in physics from MIT, an M.A. and Ph.D. in physics from SUNY Stony Brook, and a J.D. from NYU. He is admitted to practice law in New York and before the U.S. Patent and Trademark Office. Mr. Sears is serving his second term and 6th year as a PPAC member.

JEREMIAH CHAN, LEGISLATIVE AND POLICY SUBCOMMITTEE CHAIR

Mr. Chan is Associate General Counsel and Head of Patents, Licensing and Open Source at Meta Platforms. He and his team are responsible for the development of Meta's worldwide patent portfolio, intellectual property transactions, open source software, dispute resolution, and other risk mitigation initiatives. They also focus on industry-wide efforts to promote greater diversity, equity, and inclusion in innovation and the intellectual property profession. Prior to joining Meta, Mr. Chan led an international team at Google that was responsible for portfolio strategy, operations and data science; and he previously served as Head of Intellectual Property for JDSU, where he managed a department that was responsible for portfolio strategy, litigation, licensing and technology transactions. Mr. Chan started his career in private practice with the law firm of Fish & Neave, where he specialized in litigation, opinion work, and client counseling. He graduated from UC Berkeley with highest honors and received his JD from Cornell Law School. Mr. Chan serves as an advisory board member for the High Tech Law Institute at Santa Clara University School of Law and as chairman of the board for the Bay Area Anti-Trafficking Coalition, a nonprofit organization that combats human trafficking in the San Francisco bay area and beyond. Mr. Chan is serving his first term and 3rd year as PPAC member.

JUDGE SUSAN G. BRADEN (RET.), ARTIFICIAL INTELLIGENCE AND IT SUBCOMMITTEE CHAIR

Judge Braden began her career as a Senior Trial Attorney in the Department of Justice's Antitrust Division. She later became Counsel to two Federal Trade Commission Chairmen and was a federal trial and appellate litigator in private practice. In 2003, she became a Judge on the U.S. Court of Federal Claims; in 2017, she was designated Chief. After retiring in April 2019, Judge Braden was appointed to the U.S. Administrative Conference as a Public Member, and the Legal Advisory Board of the Washington Legal Foundation. She also serves as Jurist-In-Residence at the Center for Intellectual Property and Policy (CIP2), Antonin Scalia School of Law, George Mason University and on the Board of Directors, United Inventors Association. In July 2020, she was appointed by the Office of the United States Trade Representative as one of 10 individuals who will represent the nation in disputes arising under the United States-Canada-Mexico Trade Agreement. She also serves on the boards of two companies that create and sell software and artificial intelligence and a major construction company. Judge Braden received a bachelor's degree and law degree from Case Western Reserve University. She also received a Business Administration Certificate from Georgetown University and attended Harvard Law School's Program on Negotiation. Judge Braden serves as an Arbitrator, Mediator, and Special Master for the American Arbitration Association and FedArb. Judge Braden is serving her first term and 2nd year as a PPAC member.

DANIEL BROWN, INNOVATION EXPANSION AND OUTREACH SUBCOMMITTEE CHAIR

Dr. Brown is an award-winning designer, inventor, entrepreneur, and full-time professor at the Segal Design Institute of Northwestern University. He is a native of Chicago, where he attended St. Xavier University, earning a bachelor's degree in biology with a minor in chemistry. Additionally, Dr. Brown earned his master's degree from the McCormick School of Engineering at Northwestern University, and a Ph.D. in design from Coventry University in the United Kingdom. He has received over 100 U.S. and international utility patents for his novel product solutions in industry and has taken many of his inventions to market himself as a founder of two startups. Dr. Brown has seen both sides of the American Dream, enjoying the market success of his bionic wrench invention, while at the same time fighting counterfeit versions that almost destroyed his business. Dr. Brown believes that the best social system for our nation provides good jobs, but job creation and the economic benefits of innovation fundamentally depend on the ability of inventor-entrepreneurs to protect their investments through their intellectual property. He continues to work in support of an equitable, protectable, and sustainable intellectual property system for all inventors. Dr. Brown is serving his first term and 2nd year as a PPAC member.

CHARLES DUAN, PQUIP SUBCOMMITTEE VICE CHAIR

Mr. Duan is a Senior Policy Fellow in the Program on Information Justice and Intellectual Property at the American University College of Law. He is also Director, Technology and Innovation Policy, at the R Street Institute, a nonprofit, public policy research organization in Washington, D.C. Prior to his current positions, Mr. Duan was Director, Patent Reform Project, at Public Knowledge, a nonprofit public interest organization, and he was a Research Fellow for Professor Paul Ohm at the Colorado Law School, a position funded by the National Science Foundation. He worked as a patent litigation and prosecution attorney at Knobbe Martens Olson & Bear LLP, as well. Mr. Duan is serving his first term and 1st year as a PPAC member.

SUZANNE HARRISON, INNOVATION EXPANSION AND OUTREACH SUBCOMMITTEE VICE CHAIR

Ms. Harrison is the Founder of Percipience LLC, a board-level advisory firm focused on managing and developing IP strategy, quantifying and mitigating IP risk, and increasing IP value capture. Ms. Harrison was previously a Director with Inflexion Point Strategy, an IP investment bank providing IP transaction assistance, and was the CEO and Founder of Gathering2.0, the first online community to increase information transparency and efficiency in the patent transaction market. She is also the co-author of three published books, each of which takes an in-depth look at the concepts of intellectual asset management and highlights the winning strategies used by large companies to maximize the value of their IP. Ms. Harrison is serving her first term and 1st year as a PPAC member.

HEIDI NEBEL, LEGISLATIVE AND POLICY SUBCOMMITTEE VICE CHAIR

Ms. Nebel serves as the Managing Partner and Chair of the Biotechnology & Chemical Practice Group of McKee, Voorhees & Sease, PLC. Ms. Nebel has over 29 years of experience obtaining patents and designing IP strategy in the areas of biotechnology, chemicals, and pharmaceuticals. She serves as an advocate for her clients and believes that the best results come from working in close association with USPTO examiners. Her clients include over 40 universities and research institutions, as well as fortune 500 companies around the world. She is also an active member of ChIPs®, a nonprofit organization that advances and connects women in technology, law, and policy. Ms. Nebel is serving her first term and 1st year as a PPAC member.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