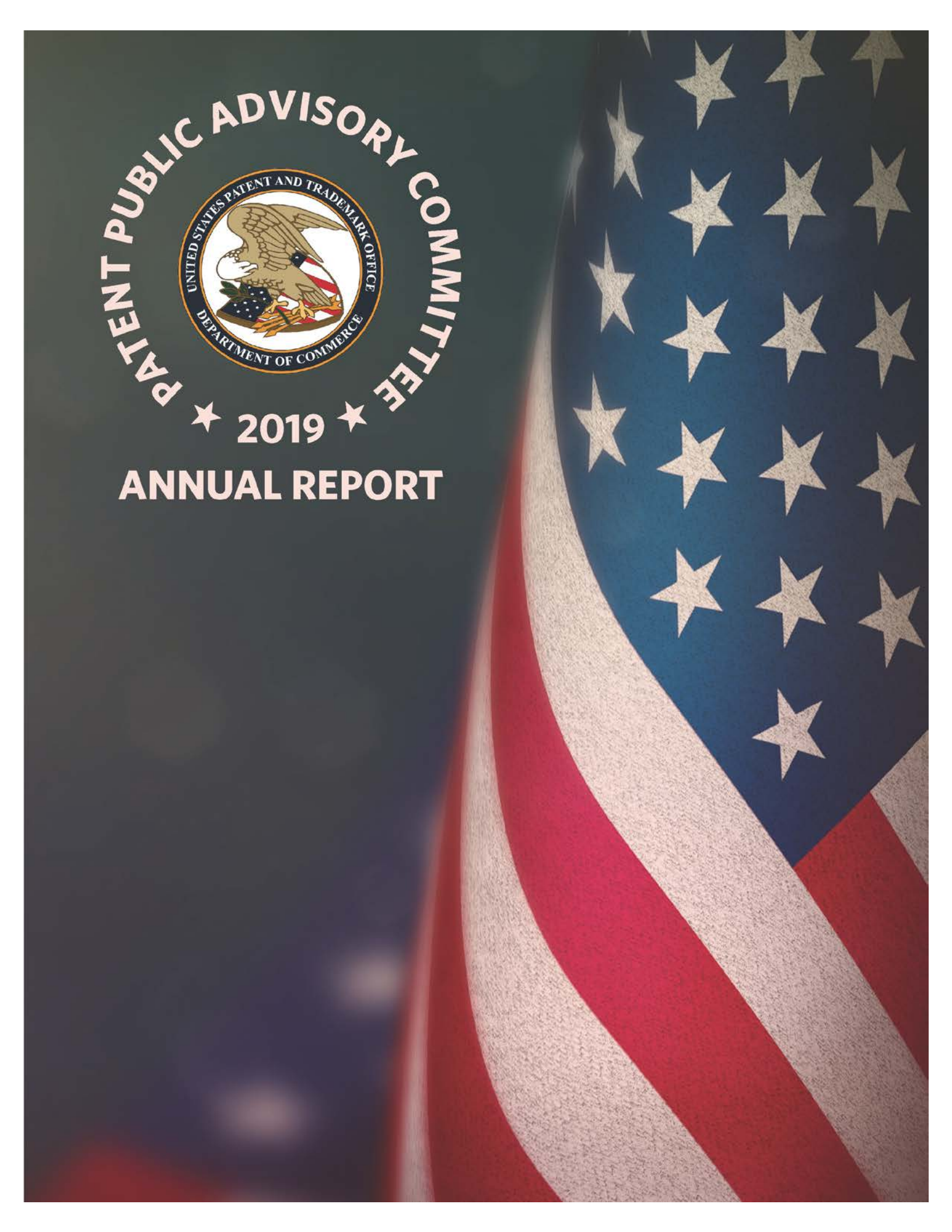
PATENT PUBLIC ADVISORY COMMITTEE

2019 ANNUAL REPORT



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

November 1, 2019

The President
The White House
Washington, D.C. 10500-0001

Dear Mr. President:

As Chairperson of the Patent Public Advisory Committee (PPAC) of the United States Patent and Trademark Office (USPTO), it is my honor and privilege to present to you the PPAC's Annual Report for FY 2019. This Annual Report sets forth the PPAC's focused review and recommendations regarding the USPTO's patent policies, goals, performance and budget for FY 2019.

Highlights of our 2019 Annual Report include:

1. Commending the USPTO in fast tracking and investing in immediate improvements to modernize its information technology systems so as to meet its goals of improving the reliability and certainty of patent rights, to support patent examiners in achieving and maintaining higher quality searching and examination, and to keep applicants' critical technical information secure from theft and fraud by private as well as state actors.

2. Applauding the USPTO for its agile management of expenditures during the lapse in appropriation authority, which thereby enabled the USPTO to maintain its patent operations - without interruption - for all users of the U.S. patent system. In any future appropriation lapses, the PPAC recommends that the USPTO be able to spend the funds that it collects from users during such a time period. Any

interruption in USPTO operations negatively impacts patent filers and users in the United States as well as internationally and harms our U.S. patent system.

3. Continuing to recommend that the USPTO: (i) proceeds with the fee increase proposed in its Notice of Proposed Rulemaking after taking into account public input; and (ii) manages expenditures and collections to increase significantly its operating reserve for patents to at least three months of operating requirements.

4. Applauding the USPTO as of September 30, 2019 for achieving its patent application goals of: (i) less than 15 months first action pendency; and (ii) less than 24 months total pendency.

5. Commending the USPTO's efforts, culminating in the issuance of the 2019 Revised Patent Subject Matter Eligibility Guidance, to increase clarity, predictability and consistency in how subject matter eligibility under 35 U.S.C. § 101 is applied in examination and enable examiners to readily determine if a claim recites an abstract idea.

6. Commending the USPTO on two innovative pilots directed at improving the examiners' prior art searching skills through, in one pilot, written feedback from Review Quality Assurance Specialists and, in the second pilot, collaboration with peer examiners; and recommending that the USPTO evaluate the potential value in establishing either or both of these pilots as a formal program.

7. Commending the significant strides that the USPTO's Patent Trial and Appeal Board (PTAB) has made in 2019 and looking forward to seeing further progress in meeting and exceeding the Director's goal of having a well-balanced, fair, and predictable U.S. patent system in 2020. The PPAC recommends: (i) the need for more consistency in PTAB decisions relating to multiple or serial challenges in *inter partes* reexamination; and (ii) making post-grant proceedings more accessible to small and micro-entity patent owners by formally requesting Congress to permit reduced fees for such entities.

8. Recommending that, with respect to the implementation of the SUCCESS Act, the USPTO consider whether an initiative is feasible, in which inventors from underrepresented groups, their employers or assignors, are incentivized to highlight qualified inventor applications. The PPAC is concerned that conducting a study, without providing additional means or programs (such as enhanced education, easier filing procedures, and stakeholder and corporate outreach) for all underrepresented inventors to apply for patents, may not increase their representation or meet the objectives of the SUCCESS Act.

9. Recommending that each of the USPTO's Regional Offices focuses on ways that it can directly assist the user community with convenient and real-time access to the USPTO's services. The PPAC also recommends that the USPTO conduct a cost-benefit analysis of the Regional Offices and make such information available to the user community.

10. Recommending that the USPTO continue its collaboration with the largest intellectual property offices in the world on the Collaborative Search and Examination Pilot and other work-sharing programs designed to improve the process for patent protection and the reliability of issued patents globally.

The USPTO and PPAC have worked together effectively, efficiently and consistently throughout the past year. The PPAC applauds Andrei Iancu, Under Secretary of Commerce and Director of the USPTO, in his thoughtful, proactive and fast-paced leadership and his outreach to the PPAC for its input and guidance. We further commend the appointment of Laura Peter as Deputy Director of the USPTO and her work with the Director in promoting and encouraging intellectual property protection globally. The PPAC further commends Director Iancu, the USPTO employees and the USPTO's Patent Office Professional Association for their assistance, support, discussion and commitment to the U.S. patent system and their dedication to improving the patent system both nationally and internationally.

As you know, our U.S. patent system is a vital part of the world economy. Your continued commitment and support of our patent system are greatly appreciated and reminds us, as a committee, of the great importance in keeping the USPTO on track and high-performing for our diverse stakeholder and user community while, at the same time, planning for the future.

We look forward to discussing with you any questions that you or your staff might have regarding this Report and the PPAC's activities during the past year as well as the PPAC's future planning with the USPTO for FY 2020.

Very truly yours,

Marylee Jenkins
Chairperson
Patent Public Advisory Committee
U.S. Patent and Trademark Office

Enclosure: Patent Public Advisory Committee Fiscal Year 2019 Annual Report

Cc: The Honorable Lindsey Graham, Chairman, Senate Judiciary Committee
The Honorable Dianne Feinstein, Ranking Member, Senate Judiciary Committee
The Honorable Thom Tillis, Chairman, Subcommittee on Intellectual Property
The Honorable Chris Coons, Ranking Member, Subcommittee on Intellectual Property
The Honorable Jerrold Nadler, Chairman, House Judiciary Committee
The Honorable Doug Collins, Ranking Member, House Judiciary Committee
The Honorable Hank Johnson, Chairman, Subcommittee on Courts, Intellectual Property, and the Internet

The Honorable Martha Roby, Ranking Member, Subcommittee on Courts, Intellectual Property, and the Internet
The Honorable Wilbur Ross, U.S. Secretary of Commerce
The Honorable Andrei Iancu, Under Secretary of Commerce for Intellectual Property and Director of the U.S. Patent and Trademark Office
Andrew Hirshfeld, Commissioner for Patents

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EXECUTIVE SUMMARY AND RECOMMENDATIONS

I. INTRODUCTION

The Patent Public Advisory Committee (PPAC) thanks the United States Patent and Trademark Office (USPTO), and, in particular, Under Secretary of Commerce and Director of the USPTO, Andrei Iancu, for his leadership, which has enabled the PPAC to interact more effectively, efficiently, and consistently with the employees of the USPTO throughout the past year. Indeed, the employees of the USPTO have provided extensive information and access allowing the committee members to better understand the complex issues facing the USPTO and permitting constructive discussions of options, constraints, and upcoming USPTO initiatives for our consideration and comment. The PPAC thanks management and the employees of the USPTO as well as the Patent Office Professional Association of the USPTO for their combined assistance, support, discussion, and commitment over the past year and for their ongoing efforts to improve the patent system both nationally and internationally. We look forward to our continuing work and interaction with the USPTO in the coming year.

II. INFORMATION TECHNOLOGY

The USPTO's IT group has changed substantially in the last year. A new CIO is in place and the USPTO has executed multiple contracts with renowned IT consultancy firms. The USPTO is well on its way to moving from legacy computing systems to modern hardware that lends itself well to the execution of many types of software. Software that is used internally (*i.e.*, patent examination) and externally (*i.e.*, practitioners and inventors) has been substantive upgraded. Hardware that has readily accessible spares and which is serviced by vendors marks another change in USPTO IT operations.

The PPAC notes that the USPTO has and is making substantial investments in its IT systems, and this is made possible by the fees paid by the user community. Indeed, the USPTO's website is the "front door" that users encounter first. It is imperative that USPTO's IT systems be fast, robust, stable and secure. The PPAC is of the opinion that the various initiatives that are described herein will serve the needs of the IP community for many years.

RECOMMENDATIONS

The PPAC believes that the following recommendations will serve both the internal and external communities that the USPTO IT systems serve:

1. Continue to engage outside consultancy firms to help both present and future IT needs;
2. Continue to stabilize systems while working to replace legacy systems with modern hardware that can make use of software modules that are easily installed and maintained; and
3. Continue cooperation between the USPTO and the Examining Corps in the development of examination tools by USPTO's IT group.

III. FINANCE

In FY 2019, patent fee collections were 1.4% above while patent spending was 4.2% below the estimates included in the FY 2019 President's Budget. The operating reserve grew to $383 million from $311 million, exceeding the recommended minimum level of $300 million.

In FY 2019, the USPTO's appropriation authority was determined by a series of Continuing Resolutions on September 8, 2018; December 7, 2018; and January 25, 2019. A full year appropriation was enacted on February 15, 2019, authorizing the USPTO to spend $3.37 billion during FY 2019. Unfortunately, between December 22, 2018 and January 25, 2019, there was a lapse in appropriation authority, and the USPTO was unable to access the user fees collected during that period of time to fund its operations.

The USPTO instead drew upon the operating reserve to continue its operations during the appropriation lapse period. The PPAC commends the agility and resourcefulness of the USPTO in managing its expenditures in a way that allowed examination to continue and insulated users from the interruption in funding authorization. Without knowing the duration of the funding interruption, the USPTO leadership adroitly deferred certain expenditures to extend the effective life of an operating reserve that was already below its optimal level. Once appropriations resumed, the USPTO regained access to fees that had been collected and was able to replenish the operating reserve. This episode highlighted the importance of an adequately funded operating reserve.

The biennial fee review process that began in FY 2017 (2017 Biennial Fee Review) progressed further in FY 2019. Following the collection of public input, the PPAC issued a report in October 2018 on the fee adjustment proposal made by the USPTO in August 2018. In July 2019, the USPTO included a revised version of its August 2018 fee adjustment proposal in a Notice of Proposed Rulemaking (NPRM) inviting further public input. The revised proposal makes some adjustments but retains a 5% across the board increase, other targeted increases, and a new annual fee for registered practitioners. The NPRM addressed specific input from the PPAC and the public, making changes on some individual proposals, and offering additional information on other points. After considering the submitted public comments, the USPTO is expected to move ahead with fee adjustments between July 2020 and January 2021 after a final rule making. A subsequent biennial fee review began in FY 2019 (2019 Biennial Fee Review), but has not as of yet, resulted in a proposal for a further adjustment in fees.

The President's Budget for FY 2020 proposes spending of $3.172 billion on patents. As of this writing the Commerce, Justice, and Science subcommittees of the House and Senate appropriations committees have adopted the proposal from the Budget for USPTO spending, but a final appropriation has not yet been enacted. The FY 2021 budgeting process is underway. The PPAC received the USPTO's proposal for the President's Budget for FY 2021 in August 2019.

RECOMMENDATIONS

Adequate and stable funding combined with excellent financial management remains critical for meeting the USPTO's goals of reliable and certain patent rights, robust technology that supports the USPTO's core mission, and resilience to variability in fee collections or interruptions in funding authority.

The PPAC recommends that the USPTO endeavor to significantly increase its operating reserve in coming years. The recent interruption in appropriations was a stark illustration of the importance of the operating reserve. The operating reserve was an essential tool in maintaining continuous service. The USPTO should not lose sight of the goal of an operating reserve that is adequate to fund three months of operation, which would ensure continuity of USPTO operations and the ability to continue long-term investments.

The PPAC recommends that in future appropriation lapses, the USPTO should be able to spend the funds that it collects from users during such a time period. Although the USPTO avoided an interruption of examination operations in the recent appropriation lapse, there is no guarantee that a future lapse would not be more impactful. By statute, the funds collected by the USPTO cannot be spent on other purposes so there is no benefit to restricting the USPTO's access to them. An interruption in the USPTO's operations would not only harm patent filers but also put the USPTO in a negative light in comparison to its international peers. Ideally, the PPAC believes that the USPTO should be removed from the appropriation process entirely. Because the USPTO can only spend its own fees, the appropriation process poses risks to the USPTO in the form of funding interruptions, while not meaningfully affecting the level of expenditure that must over time track closely to collections.

The USPTO should move ahead with the fee increases proposed in its recent NPRM after taking into account further input from the public and making changes where warranted. The USPTO has made some adjustments in response to the PPAC's concerns. Although certain adjustments that the PPAC questioned remain in the proposal, it is nonetheless essential that the USPTO have adequate revenue to fulfill its objectives. The costs to the public of an inadequately funded patent system would, among other things, be very high in increased pendency and lower quality, and therefore the USPTO is justified in seeking further fees. More specifically, maintaining the robustness of the USPTO's infrastructure and improving the tools available to examiners will require sustained IT funding. The PPAC believes that the proposed fee increases are justified by the value that an effective USPTO brings to the public.

IV. PATENT QUALITY

In FY 2019, the USPTO continued its efforts to improve prior art searching and sourcing. The USPTO launched the Peer Search Collaboration Pilot and the Office of Patent Quality Assurance (OPQA) Search Feedback Pilot to encourage collaboration among the examiners and allow one-on-one interaction with Review Quality Assurance Specialists for the purpose of strengthening examiners' search strategies and skillsets. The USPTO also made progress in other initiatives directed at making the best, most relevant prior art accessible to examiners early in the examination process.

In early FY 2019, the USPTO issued the 2019 Revised Patent Subject Matter Eligibility Guidance (2019 PEG) to increase clarity, predictability, and consistency in how subject matter

eligibility under 35 U.S.C. § 101 is applied by USPTO personnel. In addition, with the issuance of the 2019 PEG, the USPTO aimed to enable its personnel to determine readily if a claim does or does not recite an abstract idea. As in previous years, the USPTO also offered multiple other training and educational opportunities for both internal and external stakeholders.

The FY 2019 quality metrics data shows strong compliance rates for allowances in all statutory compliance categories. The compliance rates for 35 U.S.C. § 101 were strong for all office action types. The compliance rates for 35 U.S.C. § 103 were down from FY 2018 and fell short of the FY 2019 target for all office action types except allowances. The FY 2019 overall statutory compliance rate was 98% for 35 U.S.C. § 101, 94% for 35 U.S.C. § 102, 90% for 35 U.S.C. § 103, and 91% for 35 U.S.C. § 112. When viewed according to office action type, however, the FY 2019 quality metrics data shows compliance rates ranging from 71% for non-final office actions to 91% for allowances. For all office action types, the overall compliance rate was 79%.

RECOMMENDATIONS

The PPAC appreciates the USPTO presenting different views of the quality metrics data at the quarterly the PPAC's meetings but recommends that the USPTO prioritize transparency and clearer communication of regularly updated and easily accessible data in a consistent format on the USPTO website. Without access to reliable data from the USPTO itself, many external stakeholders are relying on third-party data analytics services in an effort to determine the potential for high quality patent protection in the U.S. These stakeholders, and the broader USPTO user community, would only benefit from having direct access to the quality metrics data from the USPTO.

The PPAC commends the USPTO for initiating the Peer Search Collaboration Pilot and the OPQA Search Feedback Pilot and recommends that the USPTO further analyze the data from these pilots to determine the potential value of establishing either or both as formal programs.

Finally, the PPAC recommends that the USPTO identify metrics useful in quantifying the return on the investments made by the USPTO in quality initiatives and suggests that the USPTO begin with tracking the investment made in terms of budget and other resources in at least those quality-related projects that are expected to produce results that are measurable in one or more aspects. Without access to current quality data or information on the level of resources allocated

to the quality initiatives, external stakeholders have been expressing increasing concern over whether or not the investments made by the USPTO have resulted in any actual or appreciable improvements.

V. PATENT PENDENCY

The U.S. Department of Commerce 2018-2022 Strategic Plan (the Plan) provides as Strategic Objective 1.3, "Strengthen Intellectual Property Protection." The Plan sets out two strategies, the second of which reads as follows:

> **Optimize patent and trademark quality and timeliness**.
> A critical component of creating jobs and investment is the protection of IP through the timely issuance of quality patents and trademark registrations. USPTO will improve and optimize patent processing timelines through process improvements and by aligning examination capacity with projected demand.

The Plan identifies key performance indicators and sets the goal for pendency:

> By September 30, 2019, the USPTO will reduce patent pendency to less than 15 months for first action pendency and less than 24 months for total pendency from end of fiscal year 2017 results of 16.3 months and 24.2 months, respectively.

This is an FY 2019 Agency Priority Goal (APG), and, as such, the goal is embodied as Goal 1 of the Plan.

The first office action pendency is the average number of months from the patent application filing date to the date a first office action is mailed by the USPTO. As of September 30, 2019, the average first action pendency is 14.7 months.

Total pendency is measured as the average number of months from the patent application filing date to the date the application has reached final disposition. As of September 30, 2019, the average total pendency is 23.8 months.

The PPAC congratulates the USPTO for achieving the APG of less than 15 months first action pendency and less than 24 months total pendency by September 30, 2019. This reduction from end of fiscal year 2017 (16.3 months and 24.2 months, respectively) is significant, particularly in view of a steady increase of 6.7% of new utility, plant, and reissue (UPR) filings over the plan period. UPR filings for FY 2017 through 2019 are as follows: 419,826 (FY 2017), 426,930 (FY 2018), 447,905 (FY 2019).

The PPAC recognizes that the APG was achieved through a collaborative partnership across segments of the Office, including the Office of Patent Resource and Planning, the Office of Patent Examination Processing, the Office of the Patent Examination Support Services, and, most significantly, the Patent Examining Corps. Notably, the pendency goals were achieved while maintaining the quality of the patents issued by the USPTO. The PPAC, user community, and public appreciate the hard work to achieve this important goal.

RECOMMENDATIONS

The PPAC recommends that the USPTO develop and implement a plan to transition to the pendency commitments provided by the American Inventors Protection Act (AIPA). The AIPA guarantees each application a prompt examination by the USPTO. The guarantees are fourteen (14) months from the filing date of an application to the mailing date of a first office action, four (4) months to respond to an amendment, four (4) months to act on an appellate decision, four (4) months to issue a patent after payment of the issue fee and thirty-six (36) months from the filing date of an application to the issue date of a patent. The AIPA guarantees are per application guarantees, not average statistics. The PPAC recommends that the USPTO adopt the AIPA metrics starting in FY 2020. The AIPA goals are denoted as 14/4/4/4/36 goals. While each of these goals is an important measure to an applicant under the AIPA, the PPAC views the 14/36 guarantee as being most indicative of pendency and USPTO performance.

The PPAC recommends that the USPTO develop a specific two-year plan for improving compliance with the AIPA guarantees. The plan should set challenging AIPA goals and include a timeline for reaching AIPA compliance for a significant majority of applications and fiscal year targets for steady improvement in the interim.

The PPAC recognizes that the transition from APG to the AIPA guarantees is a significant transition. It is important that all stakeholders are appropriately informed of the transition and the plan to achieve these guarantees. Therefore, the PPAC recommends that the USPTO communicate its plan for achieving full AIPA compliance and solicit public comments. Further, the PPAC recommends that the USPTO update the Data Visualization Center (https://www.uspto.gov/dashboards/patents/main.dashxml) to reflect the AIPA performance metrics and to include such data in all pertinent sections of future Performance and Accountability Reports (PAR). The PPAC believes that publication of a timeline and specific fiscal year targets for meeting the AIPA guarantees will promote accountability within the USPTO, foster oversight of USPTO operations, and improve the perception of the USPTO as an efficient and fair government agency by the applicant community and the public.

VI. PATENT TRIAL AND APPEAL BOARD

In FY 2019, the PTAB (or the Board) has achieved the noted Anticipated Changes in the FY 2018 Annual Report and has made additional enhancements to its procedures. Specifically, among other efforts, the PTAB (1) changed its claim construction standard of review from the broadest reasonable interpretation (BRI) to the *Phillips* standard applied by the District Courts and the U.S. International Trademark Commission (ITC), as well as indicated that it will consider prior claim constructions made by the District Courts or the ITC if timely provided, (2) implemented a new Motion to Amend pilot program, and (3) released another update to its AIA Trial Practice Guide.

Moreover, the PTAB went full speed ahead from FY 2018 and continued its efforts to improve the consistency, predictability, and transparency of its proceedings in FY 2019, largely in response to stakeholder feedback and the PPAC's recommendations. For example, the formation last year of the Precedential Opinion Panel (POP) to vet and streamline the designations of precedential and informative decisions has resulted in the recent designation of 18 precedential and 8 informative decisions as of the writing of this Report. These decisions can be accessed on the PTAB website under Decisions (for ease of access see hyperlink at Section V, subsection E,

below). Revised standard operating procedures (SOP) and a new 2019 Revised Patent Eligible Subject Matter Guidance were also provided to better inform stakeholders of procedures and matters before the PTAB.

In addition, the PTAB is making efforts to modernize some of its operations, including making improvements to its hearing facilities through renovations and fitting the hearing rooms with audio/visual equipment that can support remote access to view or participate in oral arguments. Further, the PTAB continues to reduce its docket and conducted two studies in FY 2019 directed to AIA trials and district court litigations for pharmaceutical patents as well as collaborated with the Patent organization on two additional studies to investigate the timing for parallel proceedings at the USPTO (Parallel Proceedings Study), and the frequency with which patent owners argue under 35 U.S.C. §325(d) that the same or substantially the same prior art or arguments raised by a petitioner in an AIA trial were previously considered by the USPTO – an issue that the PPAC predicts will prove to be a focused topic in FY 2020. Additional studies by the PTAB are summarized below.

RECOMMENDATIONS

The PPAC commends the PTAB for the aforementioned efforts and its ever-growing desire to engage with the stakeholder community to better understand the community's needs, feedback, and tensions between the differing views of the patent owners versus the accused infringers. Importantly, the PPAC thanks the PTAB and the USPTO for heeding the PPAC's recommendations to the PTAB in 2018, to "solicit stakeholder feedback as often and as balanced as possible, seeking input from both sides of the patent challenge." This effort affords the PTAB the ability to measure its performance and compare outcomes before and after the implementation of these changes. The PPAC encourages the PTAB and the USPTO to better appreciate the different hurdles that our diverse body of stakeholders have to overcome in order to secure quality, enforceable patents through the lifetime of their patents. Such hurdles include economic resources and, sometimes, cultural perceptions that rarely apply to affluent stakeholders. One suggestion is to make the PTAB more accessible to the small and micro-entities, who are currently not afforded reduced PTAB fees because Congress has yet to provide discounted fees for trials. Here, the PPAC recommends that Congress consider enacting legislation to provide for reduced fees for the small and micro-entity patent owners to make the U.S. patent system equally accessible to all innovators.

In sum, though significant strides have been made by the PTAB in meeting the Director's (and stakeholders') objective of creating a more balanced system of vetting and securing quality patents, the PPAC urges and will support the PTAB and the USPTO's continued efforts to meet and then exceed (if possible) the stakeholder community's desire to have a well-balanced, fair and predictable U.S. patent system.

VII. SPECIAL PROJECTS

The PPAC Special Projects subcommittee is charged with looking into unique issues that affect the patent right and practitioners appearing before the USPTO. This year, the PPAC looked into several matters including, the following:

A. THE REGIONAL OFFICES—HOW THEY ARE MANAGED AND OPERATED

The PPAC met with the Deputy Director, the Directors of the Regional Offices, and Patents management to better understand the operations of the Regional Offices and the contributions they make to the patent user community. Section 23 of the AIA directed the USPTO Director to establish three or more satellite offices in the United States within three years of the law's enactment, subject to available resources. Each Regional Office is headed by a Regional Director. The PPAC is aware that some in the user community are confused about the roles of the Regional Directors, who report to the Deputy Director, because their title is similar to the Patent Technology Centers Directors, who report to the Office of the Commissioner of Patents. The Regional Directors are not responsible for the patent examination or the PTAB operations in their regions. Unlike the Regional Directors, the Commissioner of Patents and members of the USPTO Executive Committee are in the chain of command to lead the agency should there be a vacancy in the Director or Deputy Director positions. The Regional Offices support, facilitate, coordinate, and lead engagements with stakeholders in their respective regions. The Regional Offices function primarily as strategic outreach and educational centers to the user and intellectual property communities.

B. THE SUCCESS ACT—MAKING THE PATENT RIGHT MORE ACCESSIBLE

On October 31, 2018, President Trump signed into law the Study of Underrepresented Classes Chasing Engineering and Science Success (SUCCESS) Act of 2018 (P.L. 115-273). The PPAC met with the Office of Governmental Affairs and the Chief Economist on the report and

recommendations called for by the SUCCESS Act. The Act requires the Director of the USPTO, in consultation with the Administrator of the U.S. Small Business Administration (SBA), to provide a report to Congress on publicly available data on patents applied for and obtained by women, minorities, and veterans. The report must also identify the benefits of applying for and obtaining patents by these groups, and it must also propose legislative recommendations for how to promote participation and increase the number of women, minorities and veterans in applying for and obtaining patents. The report was submitted on October 31, 2019.

C. PTAB-PATENTS COLLABORATION—INTERACTION BETWEEN THE PATENTS FUNCTION AND PTAB PROCEEDINGS

The PPAC conducted an inquiry into how and when the PTAB (under Chief Judge Scott Boalick) and the Patent organization (under the Commissioner for Patents, Drew Hirshfeld) work together when there are parallel proceedings at the PTAB and at the Patent organization, and also when the PTAB is reviewing arguments that were already presented during examination. The focus here is the predictability of the patent right once a patent is granted and the ability of the USPTO to operate as "one USPTO." In response to the PPAC inquiry, the PTAB collaborated with the Patent organization to conduct two studies concerning an overlap between the AIA trials and examination activities in FY 2019. In the first study, the USPTO investigated the timing for parallel proceedings at the USPTO (*i.e.*, AIA proceedings in conjunction with a reexamination or reissue) involving issued patents. In the second study, the USPTO assessed the frequency with which patent owners argue that the same or substantially the same prior art or arguments raised by a petitioner in an AIA trial were previously considered by the USPTO. Under 35 U.S.C. 325(d), the PTAB has discretion to deny institution in such cases.

D. THE OFFICE OF ENROLLMENT AND DISCIPLINE—UPDATE ON THE DIVERSION PROGRAM

The PPAC continued its review of the new Office of Enrollment and Discipline (OED) two-year Pilot Diversion Program (the Diversion Program) launched in November 2017. The Diversion Program provides relief for practitioners who have engaged in minor misconduct where the practitioner may be suffering from, for example, an addiction, a health issue, or a negligent management issue. The program is called a "Diversion Program" because the practitioner's discipline, as a result of the misconduct, is diverted where they can take restorative steps towards rehabilitation or take remedial steps to address a management issue. Because it is a new program, the PPAC continued its inquiry to determine the success of the program and whether

the recommendations in last year's PPAC Report were implemented. One such recommendation involved disseminating information regarding the Diversion Program to all practitioners who receive a Request for Information as a result of allegations of misconduct. In response to the recommendation, the OED created a brochure to accompany all Requests for Information with the disclaimer that eligibility factors must be met before OED may consider eligibility for diversion.

RECOMMENDATIONS

The PPAC recommends that each of the Regional Offices focuses on ways that each can directly assist the user community with convenient and real-time access to the USPTO's services. For example, both the PTAB hearing and examiner interview rooms are underutilized. Either the services are not needed, the availability of the rooms is not well known, or the facilities are not yet set up to accommodate remote PTAB viewings. Although the educational and outreach activities at conferences and meetings in the various regions are an excellent source of information, more direct services should be offered to the user community at the Regional Offices. The PPAC further recommends that the Regional Directors develop a list of services that they may offer. For example, it is unclear whether a practitioner can have a meeting with the OED at a Regional Office. The USPTO and the Regional Directors should continue to educate the public on the roles of the Regional Directors.

The PPAC also recommends that the USPTO conduct a cost-benefit analysis of the Regional Offices and make such information available to the user community. For example, it is unclear what percentage of the space that is leased for each Regional Office is used on a daily basis, who is using the space and for what purpose. It also is unclear how many people from the user community visit the Regional Offices on a daily basis and for what purpose. The USPTO should compile this information and make it publicly available so that the user community has a better understanding of the costs and benefits of each of the Regional Offices.

The PPAC commends the USPTO on the SUCCESS Act Report and the February report "Progress and Potential: A profile of women inventors on U.S. patents, a report on the trends and characteristics of U.S. women inventors named on U.S. patents granted from 1976 through 2016." The latter report shows that women still comprise a small minority of patent inventors. One option that the USPTO might consider is whether an initiative is feasible in which inventors

from underrepresented groups, their employers, or assignors (as the case may be), are incentivized to highlight qualified inventor applications, such as those that were offered under the Green Technology Pilot Program. Under the Green Technology Pilot Program, an applicant was able to have an application advanced out of turn (accorded special status) for examination, for applications pertaining to green technologies, including greenhouse gas reduction (applications pertaining to environmental quality, energy conservation, development of renewable energy resources or greenhouse gas emission reduction). The PPAC understands that providing special benefits to inventors based on an EEO protected status may create issues but suggests that various incentive programs be explored, and a determination be made whether such programs are feasible. The PPAC is concerned that conducting a study, without providing additional means or programs (such as enhanced education, easier filing procedures, or stakeholder and corporate outreach) for all underrepresented inventors to apply for patents, might not increase their representation or meet the objectives of the SUCCESS Act.

The PPAC commends the USPTO for conducting the PTAB-Patents collaboration studies and making the results available to the user community. The PPAC recommends that the USPTO use the results of the studies to develop further guidelines for when a reexamination or reissue will be stayed pending the outcome of a parallel PTAB proceeding. The PPAC also recommends that the USPTO develop guidance for when prior art or arguments already presented to the USPTO will be considered new or cumulative of prior art already presented and considered. Patent applicants need to know the boundaries of 35 U.S.C. § 325(d) with more certainty in order to know what prior art and arguments need to be submitted or made to the USPTO during prosecution or a reexamination in order to later present a strong 35 U.S.C. § 325(d) argument should that patent be challenged in a PTAB proceeding. Such additional guidance will serve to strengthen the fairness and predictability of the patent right.

The PPAC commends the OED for adopting its 2018 recommendations and for its excellent outreach efforts. The PPAC is hopeful that this beneficial program for practitioners will become more widely known and used in the future.

VIII. INTERNATIONAL COOPERATION, WORK SHARING, POLICY DEVELOPMENT AND OUTREACH

The USPTO has two independent offices - the Office of International Patent Cooperation (OIPC) and the Office of Policy and International Affairs (OPIA) - working on various aspects of international cooperation, work sharing, policy development and outreach.

OIPC is primarily responsible for the implementation of internationally-related technical and patent examination programs. Familiar one programs include the Global Dossier system, collaborative examination and other worksharing activities, classification, and numerous IT standardization matters.

OPIA's focus is on USPTO's policy and international role, which broadly includes advising the Administration on policy matters in all areas of IP, leading and providing expert assistance in bilateral and multilateral negotiations on IP subject matter, conducting IP programs and studies, and engaging Congress and other U.S. Government agencies on IP legislation.

Over the past year, the PPAC has worked collaboratively with OIPC and OPIA to gain a better understanding of their roles, provide insight and suggestions on their signature initiatives, and identify potential avenues of support for their challenges. In this Report, the PPAC comments upon one of these signature initiatives and one of these challenges, the IP5 Patent Cooperation Treaty (PCT) Collaborative Search and Examination Pilot (CS&E) and the diplomatic rank of IP attachés, respectively.

CS&E is a cooperative patent prosecution program among the five largest intellectual property offices in the world: the USPTO, the European Patent Office, the Japan Patent Office, the Korean Intellectual Property Office, and the National Intellectual Property Administration of the People's Republic of China. CS&E gives patent applicants who meet the criteria of the program two tremendous benefits. The first benefit arises during prosecution: applicants are given an opportunity to be much better informed about the potential scope of patent protection available for their inventions before having to make expensive decisions. The second benefit arises after issuance: applicants are given a greater degree of certainty in the quality of the patent and its ability to withstand potential scrutiny in other forums. The PPAC commends the USPTO on the establishment of the CS&E and its collaborative work with the four other IP5 Offices.

The IP attaché program includes 13 attaché posts based in 10 foreign countries. An IP attaché is a representative of the USPTO who is stationed in a foreign host country and charged with promoting the USPTO's IP policies, initiatives, and goals in the host country and surrounding region. IP attachés regularly interact with foreign government officials and routinely provide direct support to U.S. industry in foreign countries. U.S. industry has expressed its support for the IP attaché program and has requested an elevation in diplomatic rank for the IP attachés to improve their effectiveness in their interactions with foreign government officials. The PPAC commends the USPTO on its receipt of support from U.S. industry for the IP attaché program.

RECOMMENDATIONS

The PPAC recommends that the USPTO continue CS&E through the end of the pilot period and thereafter focus on an analysis of the results to help determine how best to improve the quality and reliability of patents issued by the USPTO.

The PPAC also recommends that the U.S. government provide a suitable elevation of rank to qualified IP attachés to help them better advocate for U.S. IP interests around the world.

IX. LEGISLATIVE UPDATE

The PPAC is pleased that the SUCCESS Act was signed into law on October 31, 2018. The law extended the USPTO's fee-setting authority by 8 years and requires the Director of the USPTO, in consultation with the Administrator of the U.S. Small Business Administration (SBA), to provide a report to Congress on patents applied for and obtained by women, minorities, and veterans.

Congress has been active on patent issues since the start of the 116th Congress, including introducing bills that are summarized later in this Report, and circulating draft legislation that would affect various aspects of substantive patent law. The PPAC actively reviews and advises the USPTO on proposed legislative and administrative changes, including those aimed at patent subject matter eligibility, patent quality issues and potentially abusive patent assertion activities, as well as other adjustments to the patent laws and the USPTO's fee setting authority. The PPAC will continue to monitor and consult with the USPTO on any such changes.

RECOMMENDATIONS

The PPAC recommends that the USPTO continue to engage decision makers and other stakeholders to help ensure that any proposed legislative or administrative changes are appropriately crafted and narrowly targeted without adversely affecting the overall patent system. To that end, the USPTO should consider the effect of such changes in terms of balance and fairness to all stakeholders, the efficient and effective operation of the examination process, the quality of patents issued, and the overall costs and burdens to patent owners and other participants in the patent system. In particular, the PPAC recommends that the USPTO continue to stay abreast of potential suggested legislative changes regarding patent subject matter eligibility (35 U.S.C. § 101) and the conduct of PTAB post-grant review proceedings.

I. INFORMATION TECHNOLOGY

A. OVERVIEW

In the past year, the USPTO and its leadership have set out on an ambitious path, one intended to improve dramatically the functioning of Information Technology (IT) within the USPTO. Director Iancu leads the effort to bring the IT systems to a place where the USPTO is exemplary in both the examination of patent applications and the ease in which the public and users interface with the USPTO. The USPTO has made substantial financial investments and commitments in both hardware and software. This spending by the USPTO is intended to move the functioning of IT systems to both a place of stability and rapid throughput. It is this step change in function that dictates that the IT group's role in the USPTO be emphasized.

Almost all of the interactions with the USPTO are driven by functions administered by the IT group – thus, the IT systems are instrumental in almost every facet of USPTO operation. The user community is aware that a new fee schedule will be implemented in July 2020 through January 2021, and has every right to expect much better IT performance, even without that fee increase. It is anticipated that within the next 24 months, the user will see marked improvements in the USPTO's IT systems. In the past, many external users have periodically experienced "denials of service" when trying to access USPTO systems. The PPAC anticipates that in the future these types of events will be rare, given the course that the IT group has chosen. The improvements being implemented are not incremental, but instead move the USPTO ahead in some instances by two decades. The PPAC commends the USPTO and the Director for such step changes in the USPTO's IT systems.

It is further noted that in a continued effort to improve patent quality, the USPTO's IT group works to insure that both the public and the Patent Examining Corps have rapid access to the relevant prior art; to this end, the IT group is preparing to place online over 60 million patents from Europe, Japan, China and Korea. This increase in available prior art, when combined with an increase in user demand and the global nature of intellectual property, makes it mandatory that the IT components function effectively and efficiently.

In the past year, a new Chief Information Officer, Jamie Holcombe, joined the USPTO. Under his leadership, IT consultancy firms with international standing were engaged to evaluate the

direction that the USPTO has set upon, as well as the USPTO's current hardware and software. The decision has been made to stabilize the existing hardware and software, and to ensure with the planned expansion and replacement of so-called "legacy" hardware and operating systems.

The IT functions within the USPTO can be broken down to two distinct areas – the infrastructure and the user interface. The infrastructure describes those necessary hardware and software functions that cannot necessarily be seen, but which are vital to the functioning of a robust IT system. The user interface refers to the many search tools, screen shots, forms, linkages with foreign offices, and correspondence, which inventors, patent attorneys, patent agents, examiners, and the public see and use.

1. INFRASTRUCTURE

The infrastructure elements that are important to this Report include the security measures, hardware, and the data input and processing of user information. In addition, outlined will be the tasks associated with both stabilization of the existing systems and the modernization that is taking place.

a. Security Measures

The security measures refer to the manner in which a practitioner (inventor, attorney or agent) or user can access the various filings that have been made in regard to a particular application. The intent is to ensure that only the inventor or the registered practitioner can view the proprietary portion of the filings and file wrappers. In this regard, the IT group within the USPTO relies on guidance from personnel from the National Institute of Standards & Technology (NIST). NIST requires that IT systems within the civilian side of the U.S. government comply with data standards that they have put forth. The IT group has met and continues to meet the continually heightened NIST requirements for user verification.

The USPTO can state unequivocally that the authentication of users for purposes of restricting access to intellectual property filings meets the NIST requirements. In addition, all cryptographic requirements put forth by NIST are met or exceeded by USPTO hardware. The collection of fees is also secured by NIST required protocols.

In the past year, the USPTO has replaced Public Key Identifiers (PKI) with individual identifiers for both the practitioners and for their support staff. This system works to protect the intellectual

property of both inventors and their employers who work with the USPTO. On October 1, 2018, the USPTO opened this new authentication migration tool to the public users to allow applicants to link PKI certificates to USPTO.gov accounts. As of July 2019, the former PKI certificates became invalid, and users must use the new verification process to access proprietary data.

b. Hardware

The IT system within the USPTO still relies on some legacy systems, which essentially means that the hardware is aged and very difficult to service. Similarly, some software is peculiar to the legacy computers and cannot be ported to other processing platforms. This undesirable situation continues to be improved with legacy computer systems being replaced by modern processing platforms. In the last quarter, the USPTO started adding new processing hardware. The new systems are replacing systems that were installed two decades ago. The advantages are as follows:

1. Faster processing speed;
2. Systems are more stable;
3. Spare parts are readily available;
4. Operating systems and hardware are supported by the vendor; and
5. These operating systems make it easy to "port" software programs among processors.

c. Data Input and Processing

The data input for most of a new patent application is in the form of an optical image submitted as a .pdf file. At this very instant, however, the system has been changed to also accept .docx filings. Docx filings are more efficient in terms of computer processing time. The USPTO anticipates the error rates in character recognition will drop substantively, allowing for improved quality and efficiencies in data management for streamlining the filing, application and examination processes. The USPTO has established a new fee schedule, effective between July 2020 and January 2021 that reflects the additional costs associated with .pdf filings. With this fee change, the USPTO anticipates that the bulk of filings will be in .docx format. This singular change is expected to bring about a substantial increased bandwidth for other applications. The PPAC believes that this is a very positive step being taken by the USPTO.

d. Stabilization and Modernization

Stabilization of the existing legacy systems has been prioritized within the IT group. The IT staff has identified 25 current "at risk" systems and has created a stabilization roadmap. In addition, the USPTO engaged a systems integrator to help stabilize the most complex of the 25 systems.

The IT management group has completed assessment of 33 core applications for use in the USPTO. The criterion for assessment included Usability, Quality, Future Readiness and Criticality.

The user interface describes the manner in which the user community (examiners, inventors, practitioners and the public) interacts and makes use of software in the application and examination process. The various software tools relate to the examination of applications, USPTO correspondence, access to foreign filings, patent classification, management tools, and search of prior art. Described here are major changes to the user interface with the goals always being those of both improving patent quality and streamlining the filing, application and examining processes. All of the new user interface products are essentially a combined and linked system known as Patents End to End or PE2E. The various portions of this entire suite of software are all interrelated and can communicate easily between components. The various modules are listed below:

i. PE2E: Examination Products

PE2E Examination Products actually consist of 4 products, three of which are known as Docket Application and Viewer (DAV), Official Correspondence/Action (OC), and Cooperative Patent Classification (CPC). These systems have been partially or fully released, and are in use within the USPTO.

PE2E Search is the Next Gen system that the Patent Examining Corps will use to conduct a search of prior art. A stress test followed by a Phase 0 rollout to 200 examiners who will provide input over a forty five day period is planned for FY 2020 Q1. The Patent Center is designed to replace Public and Private PAIR as well as EFSWeb. This improvement will also allow text input (.docx), which also was covered under the Infrastructure Section of the Report. In essence, the Patent Center will allow "one stop shopping" for users who in the past have had to enter the various databases through different web pages and links. In FY 2020 Q1, additional applicants

are being added as a beta group to submit patents via the Patent Center. External stakeholders have expressed a desire to participate in the Beta testing, and their inclusion will only improve the final product.

ii. PE2E: Global Dossier

Global Dossier allows access to published foreign IP office filings as well as allowing foreign IP offices to view published U.S. filings. Work is continuing to be done to enhance the functionality of Global Dossier as well as the scope of data available, allowing public users as well as examiners at patent offices around the world better access and review of foreign prior art.

iii. PE2E: Content Management System

This part of the PE2E program aims to combine several databases within the USPTO into one large database. This task will include gathering data from the Information File Wrapper (IFW), which has been one of the slowest legacy systems currently in use by the USPTO.

The work done by the IT group is essentially a revamping of a system that has run on various pieces of last generation (or earlier) hardware with the software coding for various programs being captive to a particular computer system. Moreover, the myriad of databases and antiquated hardware made operation of the system operation very unstable. PE2E Content Management System (CMS) is an enterprise document storage solution is designed to be stable and scalable infrastructure with built-in high availability and disaster recovery capabilities. All legacy IFW system images have been migrated to the new PE2E CMS and checked for quality. Patent examiners access all IFW images via the PE2E CMS when using the DAV.

e. Modernization

The transition from both legacy hardware and prior software has not been without its challenges. There have been instances when usage of alternate filing systems has been required; at other times, real-time access for users has been denied. In late FY 2018, PALM was non-functional for several days. Because the legacy systems are unstable, particularly when there is high demand by users of the system, the user is then wrongly "denied" access to data when using Public PAIR, receiving error messages that certain patent applications are unavailable for access.

While the PPAC attributes some of these issues as being due to be "growing pains," it is understandable why the user community and stakeholders are frustrated. The PPAC has

reviewed with IT group and its leadership the plans for exiting the legacy systems. The PPAC believes that the pathway for this exit is sound and that an effective and stable transition is greatly needed. After the PALM system outage in August 2018, the USPTO improved the overall Reliability. Maintainability and Availability (RMA) of the PALM system. The solution successfully replatformed the gateway onto a new infrastructure that enabled the legacy system to retain its integrity and ability to communicate between the USPTO systems. This successfully improved the USPTO's ability to recover within one day.

II. FINANCE

A. INTRODUCTION

The USPTO is funded solely by user fees rather than by the taxpayer. The fees cannot be diverted to other purposes. Nonetheless, the USPTO may only spend funds authorized by congressional appropriation. In the event that the USPTO collects more money than it is authorized to spend, the surplus is deposited in the Patent and Trademark Fee Reserve Fund (PTFRF). Appropriation legislation typically authorizes a reprogramming process whereby the USPTO may access the PTFRF after the USPTO submits a reprogramming notification to the House and Senate Appropriations committees.

Another critical element of the USPTO's funding model is the use of an operating reserve as supported by the Government Accountability Office as prudent management of fee funded agencies. As part of its management oversight and planning process, the USPTO reserves a portion of its collections in order to fund an operating reserve.[1] The operating reserve is what allows the USPTO to continue operating when there are lapses in congressional appropriation authority, as happened in FY 2019. The operating reserve also helps the USPTO maintain consistent funding of long-term initiatives in the face of fluctuations in the level of collected fees.

B. BUDGET STATUS

In FY 2019, the USPTO's budget was initially set by two Continuing Resolutions passed on September 28, 2018 and December 7, 2018. As with many other components of the federal government, the USPTO's appropriation lapsed on December 22, 2018 before another Continuing Resolution passed on January 25, 2019. The Consolidated Appropriations Act passed into law on February 15, 2019, funding the USPTO through the end of the fiscal year. The full year appropriation provided the USPTO with the authority to spend $3.37 billion of FY 2019 collections on patent and trademark operations. The USPTO allocated $3.03 billion of its total appropriation to patent operations. As of the fiscal year end, the USPTO collected $3.05 billion in patent fees and earned $31.5 million in other income allocated to patents.

[1] Fees collected in excess of the USPTO's annual appropriated level are first deposited in the Patent and Trademark Fee Reserve Fund, and later transferred to the office's Salaries and Expenses account (following a reprogramming notification), where they become part of the operating reserve.

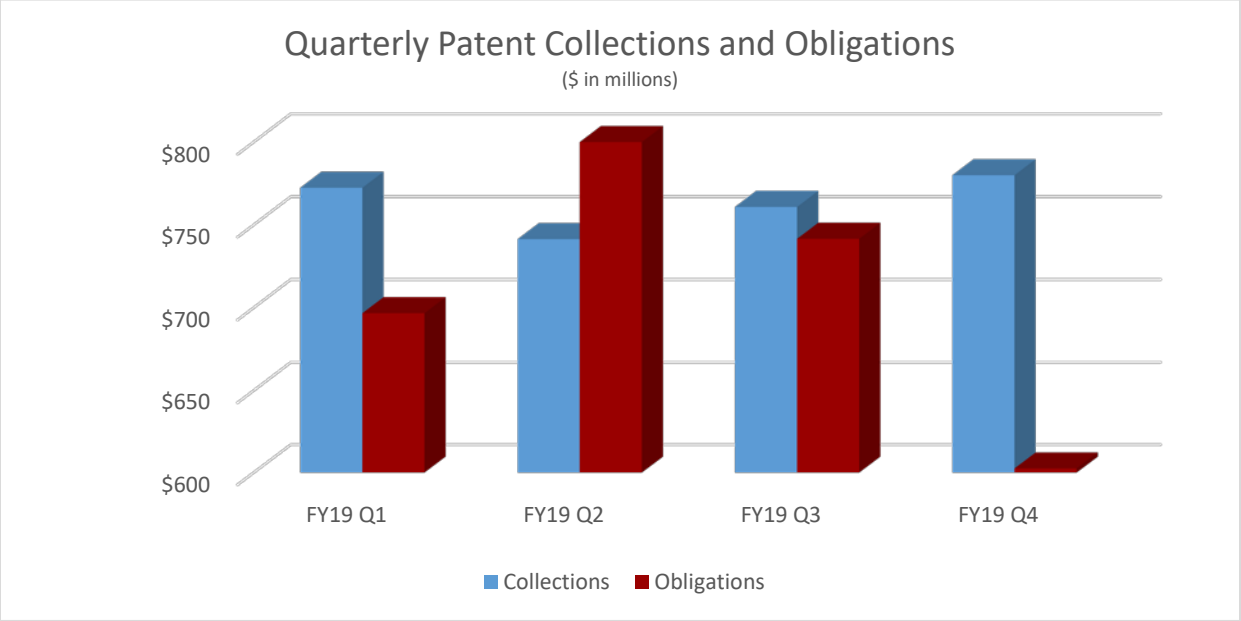
The FY 2020 President's Budget, released on March 26, 2019, includes proposed funding levels for the USPTO based on USPTO recommendations. The President's Budget proposes spending of $3.172 billion on patents and assumes patent fee collections of $3.095 billion. The Commerce, Justice, and Science ("CJS") Subcommittee of the House Appropriations Committee issued a report on June 3, 2019 recommending that the USPTO be funded to the full requested level. In making its recommendations, the CJS Subcommittee also requested that the USPTO continue to provide quarterly updates on the status of Patent End to End (PE2E). The Senate CJS Subcommittee issued a report on September 26, 2019, which also recommended that the USPTO be funded at the requested level.

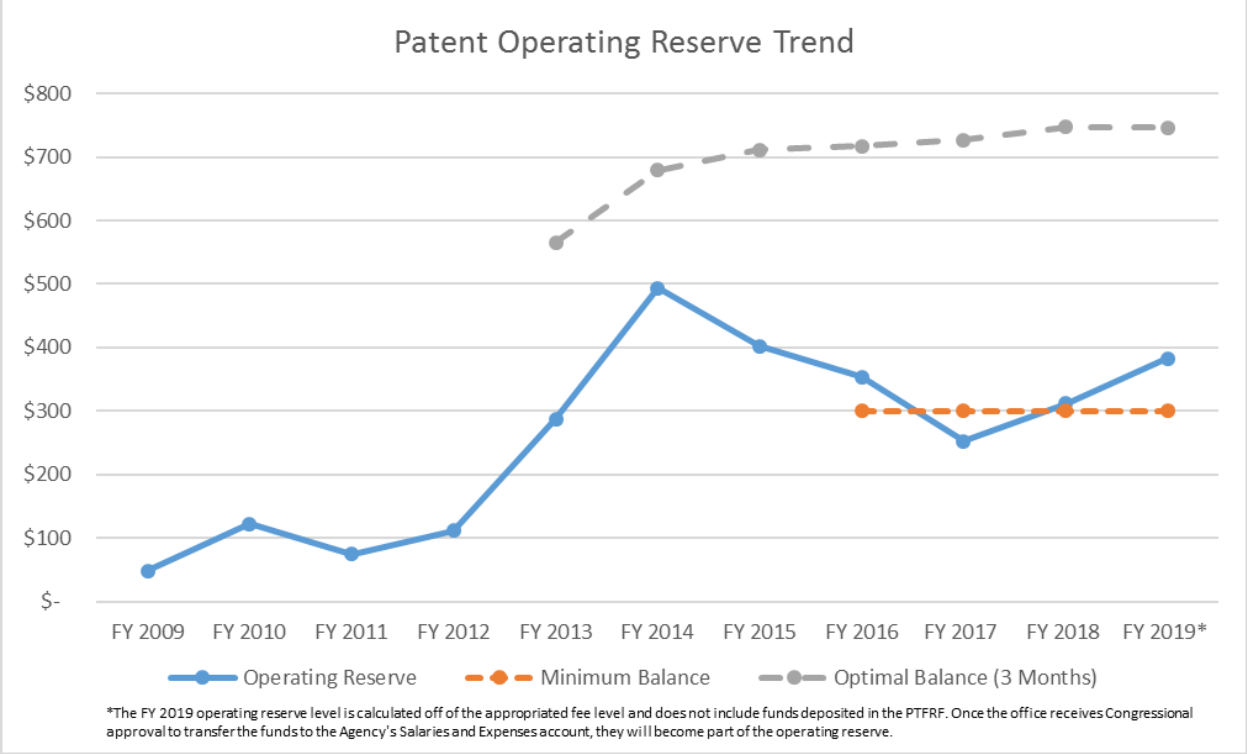
The FY 2020 President's Budget prioritizes reliable and predictable patent rights, shortened pendency, enhanced appeal procedures, and investment in IT systems. It anticipates the hiring of 600 examiners in FY 2020 for a net increase of 264. Although IT is an important priority, the FY 2020 budget anticipates some deferral of lower priority IT investments originally planned for FY 2020 and FY 2021 as the agency balances funding, capacity, and emerging priorities.

The FY 2021 Budget is also under development, the USPTO having shared its recommendations with the PPAC in late August. It is anticipated that the FY 2021 Budget will be made public the first week of February 2020.

C. FY 2019 IN REVIEW AND HISTORICAL TRENDS

In FY 2019, collections and spending were largely consistent with their budgeted and projected levels. The USPTO collected $3.05 billion from patent fees compared to $3.01 billion anticipated by the FY 2020 President's Budget. The USPTO's patent spending was $2.99 billion) compared to the $3.17 billion planned in the FY 2020 President's Budget.





Patent fee collections grew modestly (1.5%) over FY 2018. Patent spending decreased by 0.1% compared to FY 2018. The operating reserve grew by 23% to $383 million which is above the desired minimum balance of $300 million, sufficient to fund approximately 1 month of operations, but far below the optimal balance of $747 million, sufficient to fund approximately 3 months of operations.

At the time of the August 2019 PPAC public meeting, it had been forecast that the operating reserve would be $296 million at the end of FY 2019, $87 million less than the level that has actually been reached. However, this increase in the operating reserve is due in part to certain expenditures being delayed into FY 2020 and it is expected that the operating reserve will not stay at its new level.

D. INTERRUPTION OF APPROPRIATION AUTHORITY

During the lapse in appropriation authority between December 22, 2018 and January 25, 2019 (commonly referred to as "the government shutdown"), the operating reserve played a critical role in allowing key USPTO functions to continue without interruption. During this period, the USPTO continued to collect user fees but could not access them. All new spending was funded from the operating reserve, which dwindled as the shutdown continued. Through agile management by the USPTO senior leadership with intense support by the USPTO Office of the Chief Financial Officer (OCFO), the USPTO deferred certain spending to ensure that examination activities would continue without interruption. When appropriation legislation was approved, the USPTO was immediately able to access its collected funds and restore the operating reserve.

E. FEE ADJUSTMENTS

The USPTO conducts biennial reviews of its fees as required by statute. The USPTO is still in the process of implementing the results of a biennial fee review that was conducted in FY 2017. After internal review and assessment as required by statutory process, the USPTO communicated a proposal to increase various fees and establish new ones in a communication to the PPAC in August 2018. The PPAC collected input from the public including in a public hearing in September 2018 and then issued a report with recommendations in October 2018. The USPTO has now taken the next step in the fee setting process by issuing a Notice of Proposed Rulemaking (NPRM) on July 31, 2019 which includes a modified proposal that takes the PPAC and public input into account. Prior to the September 30, 2019 deadline, the USPTO collected public comments on the NPRM. The next step is anticipated to be a final rulemaking with the new fee structure expected to go in effect between July 2020 through January 2021.

The proposed fee adjustments include targeted increases in issue and maintenance fees, PTAB trial practice fees, the expedited examination fee for design patent applications, and the

surcharge for late maintenance fee payments made within six months of the due date. The proposal also establishes new fees on practitioners to maintain registration with the USPTO with discounts to encourage continuing education relevant to their practices, as well as new fees to appear pro hac vice before the PTAB, and for filing non-provisional applications in a computer storage format other than .docx. The proposal also implements a 5% increase in non-targeted fees across the board.

In its October 2018 report, the PPAC was generally supportive of increased revenues needed by the USPTO to increase the reliability and certainty of patent rights, provide timely examination, ensure a stable, secure, and modern IT infrastructure, and fund an adequate operating reserve. The PPAC supported many of the proposed adjustments, questioned some adjustments, and advocated that further information be shared with respect to others. The PPAC notes with appreciation that the NPRM has addressed each comment from the PPAC with either a modification to the fee or at least a rationale that often includes additional responsive information. The NPRM reduces the proposed maintenance fee surcharge and the active practitioner fees compared to the original proposal and makes some changes to fees for inactive practitioners but largely incorporates the originally proposed adjustments. The NPRM proposes moving forward with a new annual fee for registered practitioners with discounts given for participating in continuing professional education. The PPAC supports the new annual practitioner fee with associated discounts, but recommends that the USPTO continue to seek and collect stakeholder input while implementing the proposal.

A subsequent biennial fee review began in FY 2019, but there has, as of yet, been no proposal for a further fee adjustment.

III. PATENT QUALITY

A. INTRODUCTION

The USPTO 2018-2022 Strategic Plan identified the optimization of patent quality and timeliness as its first goal. A key objective within this goal is to issue highly reliable patents. During FY 2019, the USPTO implemented or continued several initiatives specified in this Strategic Plan. These initiatives included pilots and programs directed at increasing examiners' ability to obtain the best prior art during examination; improving content, delivery and timeliness of technical and legal training to achieve more predicable outcomes; and using patent quality data to identify areas for improvement to achieve more consistent outcomes. In FY 2019, the USPTO focused on improving prior art searching and sourcing and launched two new initiatives through which examiners collaborated with peer examiners on searching strategy or received direct search feedback from Review Quality Assurance Specialists.

In addition, the USPTO focused on another initiative specified in the 2018-2022 Strategic Plan. The USPTO evaluated formats of communicating quality metrics to enhance transparency by increasing the effectiveness, evaluation, and reporting of quality data. A copy of the 2018-2022 Strategic Plan is available at https://www.uspto.gov/sites/default/files/documents/USPTO_2018-2022_Strategic_Plan.pdf.

The PPAC commends the USPTO for the progress it has made in the quality initiatives and the on-going efforts in patent quality, as discussed below. For more information on the patent quality programs and initiatives, see https://www.uspto.gov/patent/patent-quality.

B. PRIOR ART SEARCHING AND SOURCING

The overall quality of the patent examination process and issued patents is largely dependent upon the quality of the prior art in front of the patent examiner at the outset of examination. The USPTO has established multiple initiatives, programs, tools and resources for the purpose of improving the quality of prior art searching performed by the examiners and providing the examiners with access to relevant prior art identified in related patent applications and families. Those initiatives and resources include, for example, the Expanded Collaborative Search Pilot Program and the IP5 PCT Collaborative Search and Examination Pilot (CS&E), both of which relate to sharing of search results between the USPTO and foreign patent offices and, in the latter case, collaborative examination; Access to Prior Art Initiative; Post Grant Outcomes Program;

and the modernized and scalable electronic search tools in the new Patent End to End (PE2E) suite of examination software products in development at the USPTO. Other initiatives are highlighted below.

As discussed in the 2018 PPAC Annual Report, the USPTO launched the Diagnostic Interview Pilot to determine whether diagnostic interviews, conducted pre-search and before the issuance of a first action on the merits, can lead to more effective searches and improved overall quality of the examination. Using the information provided in the diagnostic interview, the examiner can focus the search strategy in order to find the most relevant prior art at the outset. In FY 2019, the USPTO continued the analysis of the data that were generated in the pilot. In all, over 950 applications were examined over the course of the pilot. In approximately 25% of those applications, the examiner determined that a diagnostic interview would be beneficial in advancing prosecution. The examiners who participated in the pilot reported that the two areas that were most frequently discussed in the diagnostic interviews were definitions and the terminology of claim language. In further analysis of the results from the Diagnostic Interview Pilot, the USPTO compared readability test scores to identify any trends between the applications in which examiners felt an interview would be beneficial and the applications that were not selected by the examiners for an interview. The readability test scores were based on the Flesch-Kincaid Grade Level readability test that uses a mathematical formulation to score the difficulty in understanding a written passage based on the number of sentences and the length and number of words. The Flesch-Kincaid Grade Level readability test does not take into account grammar, punctuation or syntax. When compared to the average scores, approximately 80% of the applications in which the examiner felt an interview would be beneficial, scored above average for difficulty in readability of the specification, claims, or both. Applications that scored above average for the readability difficulty of both the specification and the claims were about three times more likely to have the examiner request an interview to clarify issues. The USPTO is continuing to explore readability and other trends. The PPAC commends the USPTO for exploring the impact of pre-search diagnostic interviews and recommends that an analysis be undertaken to determine if the diagnostic interviews indeed led to a more efficient examination process over time. If supported by the data, the PPAC would like to see the USPTO provide guidelines and training to the examiners on when and how to conduct a pre-search diagnostic interview. More information about the Diagnostic Interview Pilot can be found at https://www.uspto.gov/sites/default/files/documents/Quality Initiatives.pdf.

In the second quarter of FY 2019, the USPTO launched the Office of Patent Quality Assurance (OPQA) Search Feedback Pilot in which Review Quality Assurance Specialists (RQAS) conduct their own prior art searches for a set of randomly selected applications. In each case, the RQAS also evaluates the examiner's recorded search strategy and history and provides the examiner with a feedback form that includes the RQAS's search strategy. The examiner has the option of meeting with the RQAS to discuss the search feedback and share best practices on search strategies in general. As of the third quarter of FY 2019, approximately 30% of the examiners have elected to meet with the RQAS who provided feedback. Following each meeting, the participants completed a survey to assess the information provided in the feedback form and the meeting. According to the survey responses, approximately 75% of the examiners would be interested in receiving an OPQA search feedback report as part of the regular reviews conducted by OPQA. In addition, nearly 90% of examiners reported that the meetings added value to improve search quality to a moderate or great extent. With respect to the overall impact of the pilot on the examination, approximately 35% of examiners reported that the pilot was moderately to very beneficial for identifying better art for use in a rejection, approximately 65% reported that the pilot was moderately to very beneficial for learning other search strategies, and approximately 50% reported that the pilot was moderately to very beneficial for enhancing quality of the office actions. For more information about the OPQA Search Feedback Pilot, please see the presentation provided at https://www.uspto.gov/sites/default/files/documents/20190808_PPAC_OPQA-Feedback.pdf.

The USPTO also launched and completed the Peer Search Collaboration Pilot in FY 2019. In this pilot, examiners were paired, and each examiner independently searched an application to evaluate results and then met to share alternative practices in performing searches, such as search practices that are most useful in a specific technology or combination of technologies. The pilot was designed to share search expertise between examiners and survey participants to measure the process. Pairing of examiners occurred through a voluntary process which started with a lead examiner selecting an application from his or her docket for the pilot. The selected application was posted, along with the reason for its selection, for consideration by other examiners participating in the pilot. Upon selection by a secondary examiner, the application was independently searched by the lead examiner and the secondary examiner. Each examiner then reviewed the search findings from the other examiner. Following a meeting to discuss strategies and results, each examiner completed a survey to measure effectiveness. Participating examiners

provided additional feedback on the process in focus sessions. In more than 50% of the cases, the reason provided by the lead examiner for selecting the application for the pilot was for help with the invention, and about 35% of cases were selected for help with a claim limitation. About 80% of the lead examiners and 75% of the secondary examiners reported that the search results of the other examiner contained new prior art references that were relevant to the case. The top reasons for the differences between the two sets of search results was reported to be the types of search strategies, the interpretation of the claims, and the understanding of invention. More information about the Peer Search Collaboration Pilot can is provided in the presentation available at https://www.uspto.gov/sites/default/files/documents/20190808_PPAC_Peer-Search-Collaboration.pdf.

C. SUBJECT MATTER ELIGIBILITY

In January 2019, the USPTO issued the 2019 Revised Patent Subject Matter Eligibility Guidance (2019 PEG) to increase clarity, predictability, and consistency in how Subject Matter Eligibility (SME) under 35 U.S.C. § 101 is applied by USPTO personnel. In addition, in issuing the 2019 PEG, the USPTO aimed to enable its personnel to readily determine if a claim does or does not recite an abstract idea. The 2019 PEG introduced two changes to first step ("Step 2A" of the USPTO's SME Guidance) of the *Alice/Mayo* SME test. The first change implemented in the 2019 PEG was to create a new, two-prong inquiry for determining whether a claim is "directed to" an exception. Under this two-prong inquiry, a claim is first evaluated to determine whether it recites a judicial exception. If the determination is that it does not recite an exception, the claim is eligible. If the determination is that it does recite an exception, the claim is then evaluated to determine whether it recites additional elements that integrate the exception into a practical application of the exception. If it is integrated into a practical application, the claim is eligible. If it is not integrated into a practical application, the claim is then directed to an exception and must be further evaluated in the second step ("Step 2B" of the USPTO's SME Guidance) of the *Alice/Mayo* test. Of note, the revised Step 2A specifically excludes consideration of whether claim elements represent well-understood, routine, conventional activities. The second change implemented by the 2019 PEG was the replacement of the "Eligibility Quick Reference Sheet Identifying Abstract Ideas" with definitions of abstract ideas using three enumerated groupings. These enumerated groupings are mathematical concepts, mental processes, and certain methods of organizing human activity. While all examiners received training on the 2019 PEG, those examiners in art units most impacted by the revised guidance received additional in-depth

training. The USPTO also provided training for Administrative Patent Judges of the PTAB via in-depth training and for external stakeholders via chats and virtual sessions and posted the training materials on the USPTO's website for review. Following the revised guidance and training sessions, the USPTO has reported a decrease in the number of SME rejections. The PPAC appreciates the USPTO providing USPTO personnel and the user community clear guidance on subject matter eligibility but suggests that the USPTO include a footnote reminding the public that the guidance remains subject to review by the courts. The 2019 PEG and related SME resources can be found at https://www.uspto.gov/patent/laws-and-regulations/examination-policy/subject-matter-eligibility.

D. STAKEHOLDER EDUCATION AND ENGAGEMENT

In FY 2019, the USPTO continued to focus on educational opportunities and guidance for internal and external stakeholders. For example, the USPTO provided revised guidance on SME under Section 101 as discussed above, continued the analysis of application readiness, and offered opportunities for examiners and other internal stakeholders to engage with external stakeholders and the inventor community.

With the application readiness study, the USPTO sought to assess what attributes of incoming patent applications may serve to enhance the examination process. In FY 2018, the USPTO shared the results of this study which showed that the most important attributes included an inventive concept clearly set forth in the specification, independent claims that captured the same inventive concept disclosed in the specification, and claims that were solely directed to the inventive concept and not broader than the inventive concept. In FY 2019, the USPTO continued to evaluate the impact that the quality of incoming applications has on examination. Based on the examiner-identified attributes, the USPTO initiated a study in which a set of 24 questions were used to rate the attributes of 600 applications on a scale from "Very Poor" to "Excellent." The attributes are analyzed individually to see if there are any correlations to prosecution time or number of office actions to final disposition of the application. The initial results show that a rating of "Above Average" or higher for some of the attributes, such as whether the application describes the differences between the invention and the prior art; the application presents a problem that the invention is addressing, is correlated to shorter prosecution times and fewer office actions. The USPTO is conducting further analysis to verify these correlations. The PPAC commends the USPTO for undertaking this study and providing

external stakeholders with examples of specific practices in application preparation that may improve the quality of the examination process.

In partnership with the PTAB, OPQA delivered training to examiners via the Patent Examiner Quality Chat series. The first training on 35 U.S.C. § 103 was delivered to examiners by the PTAB in early FY 2019. A subsequent training that focused on claim construction and other PTAB considerations was delivered in June 2019. Given that attendance for both sessions was at maximum capacity, the PPAC recommends that the USPTO repeat the training sessions and consider additional ways of providing the training, such as virtually or in larger facilities, so that all interested examiners have an opportunity to participate in the training. Under the collaboration between OPQA and PTAB, examiners will continue to receive training directed to building the examiners' skillsets and knowledge about aspects of examination that may be relevant to or impact a potential future PTAB proceeding.

Finally, during FY 2019, the USPTO held or participated in numerous public meetings, roundtables and conferences to gather feedback, unveil initiatives and programs, offer training and guidance to the public, and engage in dialog with the public on patent issues of interest. In addition, the USPTO hosted several Patents Customer Partnership Meetings (CPMs) in FY 2019. CPMs provide an opportunity for external stakeholders to meet directly with USPTO representatives in a collaborative, industry-specific forum. The USPTO also offered its Virtual Instructor Led Training (vILT) program to brief external stakeholders on topics related to examination practice and procedures, as well as its popular three-day Stakeholder Training on Examination Practice and Procedures program (STEPP) for external stakeholders. In addition, the USPTO offered the Patent Examiner Technical Training Program (PETTP), in which outside scientists and experts provide relevant technical training and expertise to examiners; and the Site Experience Education (SEE) program, in which the USPTO funds travel costs for examiners to visit commercial and academic institutions to view current innovations in the relevant technologies. Finally, the USPTO also continued its Patent Quality Chats series to provide external stakeholders with information on patent quality topics.

E. FY 2019 QUALITY DATA

Under the Quality Metrics program, the USPTO assesses the correctness of office actions under a framework of "statutory compliance." A statutorily compliant office action is one that includes all applicable rejections and no improper rejections and one in which every asserted rejection is

correct in that the decision to reject is based on sufficient evidence to support the conclusion of unpatentability. The review standard focuses not only on assessing the correctness of the examiner's ultimate decision to allow or reject under a particular statute, but also on whether the examiner's rationale for supporting the rejection is sufficient.

During FY 2019, OPQA used this framework to review non-final rejections, final rejections and allowances for statutory compliance by evaluating whether the office action includes correct determinations for every pending claim based on the four patentability statutes: (i) 35 U.S.C. § 102 – Novelty; (ii) 35 U.S.C. § 103 – Obviousness; (iii) 35 U.S.C. § 112 - Specification (Enablement, Written Description, Definiteness); and (iv) 35 U.S.C. § 101 - Inventions Patentable (Subject Matter Eligibility). A detailed discussion about the statutory compliance evaluation is provided in the PPAC 2018 Annual Report, a copy of which can be found at https://www.uspto.gov/sites/default/files/documents/PPAC_2018_Annual_Report_2.pdf.

1. FY 2019 STATUTORY COMPLIANCE TARGETS

To define the FY 2019 statutory compliance targets, the USPTO took into account the statistical confidence level for each metric. The statutory compliance targets and results for FY 2019 are shown in the following table. For comparison, the FY 2018 statutory compliance targets and results are also shown.

Statute (35 U.S.C. §)	FY 2018 Compliance Target (%)	FY 2018 Compliance Rate (%)	FY 2019 Compliance Target (%)	FY 2019 Compliance Rate (%)
101	>97	97	>97	98
102	>93	92	>95	94
103	>95	95	>93	90
112	>93	93	>93	91

In addition to analyzing the overall compliance data on a statute-by-statute basis, the USPTO reviews the overall compliance data with respect to each type of office action. The table below shows the overall compliance rates for each type of office action for FY 2019 as well as FY 2018.

Office Action Type	FY 2018 Compliance Rate (%)	FY 2019 Compliance Rate (%)
Non-final	76	71
Final	78	73
Allowance	92	91
All Office Action Types	82	79

While the FY 2019 statutory compliance rates are within the target range for each separate category, as shown above, the overall statutory compliance rate for all reviewed applications was only 79%. That means that 21% of all of office actions reviewed by OPQA were non-compliant in at least one respect. Furthermore, 9% of all allowances reviewed by OPQA were non-compliant in at least one respect. That means that a proper rejection was omitted at the final stage of 1 out of every 10 allowed applications. The PPAC recommends that the USPTO separately analyze the compliance data for allowances and consider whether any additional training or process changes may be warranted to improve the compliance rates for allowances.

For the calculation of statutory compliance in each of the categories shown below, the total number of relevant reviews is constant for each statute and includes those reviews that OPQA conducted on randomly sampled office actions. The PPAC lauds the USPTO for the on-target compliance rates for allowances under each statutory category but is concerned with the lagging compliance rates under 35 U.S.C. § 103 and for overall statutory compliance rates for all office action types. For more information on the Quality Metrics program, see https://www.uspto.gov/patent/initiatives/quality-metrics-1.

2. 35 U.S.C. § 101

The 35 U.S.C. § 101 statutory compliance metrics are based on reviews assessing patent eligibility as well as utility, where the reviews were conducted by the OPQA on every office action type from all technologies. An action that does not reject a claim under a given statute is considered to be compliant as long as the reviewer does not identify an omitted rejection.

In FY 2019, the overall statutory compliance rate for 35 U.S.C. § 101 was about 98% which is slightly above the target of 97%, as well as the overall statutory compliance rate for FY 2018. At about 97%, the FY 2019 compliance rate for non-final office actions was also slightly above compliance rate for FY 2018. For final office actions, the compliance rate was about 98%,

which has increased over the 96% compliance rate for FY 2018. Finally, the compliance rate for allowances was about 99%, which is slightly up from FY 2018.

Over the past two fiscal years, the USPTO has provided much guidance and training to examiners on SME determinations under Section 101. This represents a significant investment in time and resources by the USPTO. The PPAC recommends that the USPTO continue to track the compliance rates of rejections made under 35 U.S.C. § 101 and share that data with the public on a regular basis.

3. 35 U.S.C. §§ 102 AND 103

The USPTO prior art statutory compliance metrics are based on reviews assessing patentability under 35 U.S.C. §§ 102 and 103, where the reviews were conducted by OPQA on every office action type from all technologies. An action that does not reject a claim under a given statute is considered to be compliant as long as the reviewer does not identify an omitted rejection. As such, the compliance metrics for 35 U.S.C. §§ 102 and 103 include as a compliant action any action in which no rejection was made and no rejection was warranted. As part of the review for prior art statutory compliance, OPQA may perform *de novo* prior art searches to determine whether the best prior art that could reasonably be found was, in fact, found. The PPAC strongly believes that patent quality is highly dependent on the quality of the prior art search. As such, for the purposes of measuring and improving the quality of prior art searches, the PPAC suggests that when a determination that a prior art rejection was improperly omitted, the USPTO collect data on whether it was omitted because the prior art was not found or provided to the examiner, or because it was considered by the examiner to be not material to patentability.

For FY 2019, the overall statutory compliance rate for 35 U.S.C. § 102 was about 94% which has improved over the overall statutory compliance rate for FY 2018 but is still slightly under the target of 95%. The FY 2019 compliance rate for non-final office actions was about 92%, which is down from 93% in FY 2018. The FY 2019 compliance rate was 95% for final office actions and 98% for allowances, both of which were about the same as FY 2018.

The FY 2019 statutory compliance rates for 35 U.S.C. § 103 ranged from about 86% to about 98%, with the compliance rate for allowances being the only category that met the target of >93%. The overall statutory compliance rate for FY 2019 came in at about 90%, which is notably lower than FY 2018 and fell short of the target of 93%. The compliance rate for non-

final office actions was about 86%, slightly down from about 89% for FY 2018. For final office actions, the compliance rate was about 85%, slightly down from about 87% for FY 2018. Finally, the compliance rate for allowances was about 98%, which is on par with the compliance rate for allowances for FY 2018. While the compliance rate for allowances has held relatively steady over the past three fiscal years, the downward trend in the compliance rates for non-final and final office actions over the same period is concerning. The PPAC recommends that the USPTO focus on the non-compliances under 35 U.S.C. § 103 to determine the root causes of the decline in compliance rates in order to address the shortcoming in meeting the FY 2019 target.

4. 35 U.S.C. § 112

The USPTO 35 U.S.C. § 112 statutory compliance metrics are based on reviews assessing patentability under 35 U.S.C. § 112(a) written description, 35 U.S.C. § 112(a) enablement, and 35 U.S.C. § 112(b), where the reviews were conducted by OPQA on every office action type from all technologies. An office action that does not reject a claim under a given statute is considered to be compliant as long as the reviewer does not identify an omitted rejection or an improper rejection. As such, the compliance metric for 35 U.S.C. § 112 includes as a compliant action any action in which no rejection was made and no rejection was warranted. Also, a single case that is non-compliant with respect to both 35 U.S.C. § 112(a) and 35 U.S.C. § 112(b) will be counted only as a single instance of non-compliance in the overall 35 U.S.C. § 112 metric.

For FY 2019, the overall statutory compliance rate for 35 U.S.C. § 112 was about 91% which is slightly down from FY 2018, and under the FY 2019 target of 93%. The FY 2019 statutory compliance rates for 35 U.S.C. § 112 were also below the target of 93% for each office action type, with the exception of allowances. The compliance rate for non-final office actions was about 88%, which has decreased from FY 2018 at about 90%. For final office actions, the FY 2019 compliance rate was about 89%, down from about 92% for FY 2018. The FY 2019 compliance rate for allowances was about 96%, significantly up from about 92% for FY 2018.

5. EXTERNAL QUALITY SURVEY

The USPTO has conducted External Quality Surveys (EQS) on a regular basis since 2006, with the most recent being completed during in the second quarter of FY 2019. The perceptions and data collected through the EQS are analyzed and used to validate measured internal quality data. Participants in the EQS are selected from a pool of frequent customers, defined by the USPTO as

customers who have filed six or more applications within a twelve-month period. Participants typically include a spectrum of customers from both private and public settings, including patent attorneys, patent agents, and other professionals involved in patent prosecution. Survey participants are asked about how often they thought rejections under specific patent statutes were reasonable in terms of correctness, clarity, and consistency. Participants are also asked to rate overall patent examination and search quality. Correctness of a rejection is defined as "[c]ompliance with all requirements of Title 35 USC as the relevant case law at the time of issuance. Decisions to reject were proper and contained sufficient evident to support a conclusion of unpatentability." Clarity of a rejection is defined as "[s]ufficiently allows anyone reviewing a rejection to readily understand the position taken." Finally, consistency is defined as "[a] similar manner of treatment and examination standards between applications and examiners."

The percentage of survey participants who reported that the overall examination quality is "good" or "excellent" has hovered around 50% from FY 2014 through FY 2018. During that same period, the percentage of customers reporting "poor" or "very poor" overall examination quality has remained relatively constant at about 9-10%. In the perception survey following the revised Patent Eligibility Guidance, there was a notable increase in customers' ratings of overall examination quality in which the ratings of "good" or "excellent" increased to 61%. In addition, the perceived change in overall examination quality, for the rating of "slightly or significantly declined," decreased to 8%. The rates normalized slightly by the end of FY 2019 with ratings of "good" or "excellent" at 56%, which is a modest improvement over FY 2018 levels.

There were no significant differences among fields in reporting the quality of prior art found and overall examination quality. Customers in the chemical fields reported higher ratings of correctness, clarity and consistency than those in the electrical and mechanical fields for the Section 101 rejections and 102 rejections. Customers in the electrical fields reported higher ratings than those in the chemical and mechanical fields for the Section 103 rejections. Customers in the mechanical fields reported higher ratings than those in the chemical and electrical fields for the Section 112(a) and 112(b) rejections.

Finally, to measure agreement between the customer perception of overall examination quality and each of the rejection factors, the USPTO calculated polychoric correlations and ranked the correlations from highest to lowest. The correctness, clarity and consistency of rejections under

35 U.S.C. § 103 were found to have the highest correlations with overall examination quality relative to other types of rejections. In contrast, rejections made under 35 U.S.C. § 101 and 35 U.S.C. § 112(b) rejections were among the lower correlations with overall examination quality. The poor correlation between the perception of and the statistical data related to overall examination quality for rejections made under 35 U.S.C. § 101 may be due to the difference in sample sets. The customer survey data represent the perception of the overall examination quality for rejections that were made under 35 U.S.C. § 101, whereas the statistical data represents a compliance rate of a sample pool of applications in which the vast majority of office actions are deemed in compliance because no rejection was made or warranted.

For more information on the USPTO quality metrics and stakeholder perception surveys, please see https://www.uspto.gov/patent/initiatives/quality-metrics-1.

IV. PATENT PENDENCY

A. INTRODUCTION

In this section, the PPAC reviews USPTO operations as they affect pendency, i.e., the time the USPTO takes to examine a patent application.

B. FILING VOLUMES AND UNEXAMINED INVENTORY

The unexamined patent application inventory is the number of new utility, plant, and reissue (UPR) patent applications in the pipeline at any given time that are awaiting a first office action by the patent examiner. Continuation, continuation-in-part, and divisional applications are included in the total. During FY 2019, the USPTO received a significantly increased volume of new utility, plant, and reissue (UPR) filings, and the backlog of unexamined UPR filings in its inventory increased to 553,889 as of September 30, 2019. The filing rate of new UPR applications increased by 5% over FY 2018, leading to the temporary increase in unexamined inventory. The unexamined UPR inventory and the number of new UPR applications should continue to be monitored closely.

C. AGENCY PRIORITY GOAL (APG) FOR PENDENCY

The 2018-2022 Strategic Plan sets the Agency Priority Goal (APG) for pendency. The Plan identifies key performance indicators and sets the goal for pendency as less than 15 months for first action pendency and less than 24 months for total pendency. The APG would reflect a significant improvement from end of fiscal year 2017 results of 16.3 months and 24.2 months, respectively.

The first office action pendency is the average number of months from the patent application filing date to the date a first office action is mailed by the USPTO. As of September 30, 2019, the average first action pendency is 14.7 months.

Total pendency is measured as the average number of months from the patent application filing date to the date the application has reached final disposition. As of September 30, 2019, the average total pendency is 23.8 months.

This is a significant accomplishment, and the PPAC congratulates the USPTO, particularly the examiners, for their diligence in achieving this goal. The PPAC, user community and public appreciate the hard work to achieve this important goal.

When viewed by Technology Center, however, the PPAC notes that four (4) of eight (8) TCs had first action pendency under 15 months. TC 2100 (Computer architecture, software and information security; 17.5 months as of September 30, 2019) and TC 3700 (Mechanical engineering, manufacturing, and products; 19.1 months as of September 30, 2019) had the highest first action pendency. Wide variation in pendency across TCs is undesirable, particularly, where timely issuance provides certainty in the market and informs investment decisions.

Pendency from Request for Continued Examination (RCE) to the next action is an average of 2.4 months. Pendency from Request for Continued Examination to the next disposal (abandonment, issuance, or another RCE) is an average of 11.0 months. See https://www.uspto.gov/dashboards/patents/main.dashxml

D. AMERICAN INVENTORS PROTECTION ACT (AIPA) GUARANTEES FOR PENDENCY

The American Inventors Protection Act (AIPA) guarantees each application a prompt examination by the USPTO that meets several requirements, notably 14 months from the filing or commencement date of an application to the mailing date of a first office action, 4 months to respond to an amendment or an appeal brief, 4 months to act on an appellate decision where an allowable claim remains in the application, 4 months to issue a patent after payment of the issue fee and all outstanding requirements are satisfied, and 36 months from the filing date of an application to the issue date of a patent. The AIPA guarantees are statutory -- Congress's goals for patent prosecution for an application. A failure to meet the guarantee can trigger patent term adjustment to compensate the applicant for lost patent term. 35 U.S.C. § 154.

The PPAC continues to recommend that the USPTO adopt the AIPA metrics for the next two-years. Each of these goals is an important measure to an applicant under the AIPA, however, the PPAC views the 14/36 guarantee as being most indicative of pendency and USPTO performance. Furthermore, the amount of PTA granted to applications is a relevant indicator of USPTO performance. Missing an AIPA goal by a week presents different policy considerations than

missing AIPA goals by months. Tracking the average number of days of PTA granted to applicants by TC will provide valuable insight into agency performance. As of September 30, 2019, the USPTO met the guarantee of 14 months to first action in 43% of applications. The USPTO's performance on meeting the guarantee of 36 months to final disposal is on track to be achieved in 83% of applications. The median number of days of PTA granted in FY 2019 is approximately 10 days with a minimum of 0 days and a maximum of 4,344 days (standard deviation 259 days). This represents a substantial improvement since average PTA awarded peaked in 2012-13.

To date, the USPTO has not yet set an agency target for the percentage of applications meeting the AIPA 14-month guarantee or the 36-month guarantee to final disposal. The PPAC appreciates the complexity of setting such targets and recommends that the multi-year goal needs to challenge the USPTO to improve the timeliness of examination, while maintaining or improving quality. The PPAC also recommends that the USPTO develop a specific plan to improve AIPA compliance and that most applications (~80-90%) should fall within the Congressional guarantees. The plan should include interim targets for steady improvement over the multi-year period. Further, the PPAC recommends the median number of days of PTA granted be reduced significantly and be incorporated in the USPTO AIPA metrics. A reduction of 20-25% of the median from FY 2019 with a lower standard deviation would be an example of a significant reduction.

The transition from APG to the AIPA guarantees is a significant transition. It is important that all stakeholders are appropriately informed of the plan to achieve these guarantees. Therefore, the PPAC recommends that the USPTO communicate its plan for achieving full AIPA compliance and solicit public comments. Further, the PPAC recommends that the USPTO update the Data Visualization Center (https://www.uspto.gov/dashboards/patents/main.dashxml) to reflect the AIPA performance metrics.

The PPAC recognizes and appreciates the efforts of the USPTO to achieve compliance with the AIPA guarantees.

E. USPTO STEPS TO REDUCE PENDENCY

The USPTO has taken a number of steps to reduce pendency of patent applications. One step is the order in which applications are examined. The USPTO does, and should, provide significant deference to the Patent Examining Corps to manage their docket most efficiently. For example, applications directed to similar subject matter may be more efficiently examined together. However, the order in which applications are examined is an important operating principle to reduce and maintain pendency within the APG and AIPA pendency goals.

The USPTO has also continued to invest heavily in training and IT systems. The Office of Patent Examination Support Service (OPESS) has improved the capability and efficiency in front-end processing to ready the application for examination, reducing the time from receipt of the patent application to the start of examination. The Patent Operation Research Team (PORT) similarly implemented enhancements, which impacted both the quality and speed of examination. Other projects that impact pendency were piloted through the year but have not yet been implemented, e.g., PE2E Search is the next generation search system. It is anticipated that PE2E Search will improve the effectiveness of search and examination as well as the efficiency of search to enable the examiners to meet performance metrics. Examiner training also plays an important role in the efficient examination, although the precise impact is difficult to quantify. For example, the Director reported that the Section 101 guidance has resulted in more clarity and efficient resolution of subject matter eligibility in examination during the August 2019 PPAC meeting.

A significant factor to the pendency of an application is the quality of the application filed by applicants. Simply stated, a well-drafted and complete application, including the information disclosure statement (IDS), is more efficiently examined than a poorly drafted application. In this regard, the USPTO has conducted studies on the readiness of an application for examination (Application Readiness). These studies identify attributes of the application that are integral to the patent application file that enhance the ability of examiners to proceed efficiently and effectively through examination. The PPAC agrees that pendency, like patent quality, is a two-way street. Both the applicant and the USPTO play a critical role. Accordingly, the PPAC applauds the study of Application Readiness and encourages the USPTO to continue to work with associations and other interested public to share the results and learnings of this effort.

The USPTO has also developed its performance metrics for examiners. These metrics reflect the critical attributes of quality and timeliness (productivity) in examination. These metrics are linked to financial incentives for productivity and docket management, both of which contribute to reduced pendency. The PPAC supports these initiatives as important and cost-effective steps to improve pendency and notes the findings from the USPTO that without the incentive awards, an additional 700 examiners would be needed to achieve the same production. This would have added annual costs of approximately $58 million over the costs of the incentive programs.

The final measure the USPTO deployed to reduce pendency is to authorize overtime pay and hire more examiners. The PPAC appreciates overtime is necessary from time-to-time to manage burgeoning fields of invention or other cyclical changes in applications. Efficient operations must include some allocation of overtime as it is the most efficient and cost effective way to increase production in the near term. However, PPAC would caution the USPTO not to overuse overtime as a lever to control pendency. The PPAC also supports hiring examiners to reflect a staffing level appropriate to manage pendency to meet the AIPA guarantees. The PPAC notes that the median number of examiners so far in FY 2019 is 8006, with 8125 on staff as of September 30, 2019. In FY 2018, the median number of examiners was 7993 with 8007 on-board as September 30, 2018. The PPAC recognizes the competing and important priority to keep user fees as low as possible. Given that pendency is a USPTO priority, the PPAC encourages the USPTO to study whether headcount can be shifted from lower priority functions within the USPTO (so that hiring new examiners is overall headcount neutral to the USPTO) before incurring the expense of hiring new additional examiners.

V. PATENT TRIAL AND APPEAL BOARD

A. OVERVIEW

The PTAB (alternatively referred to as the Board) had a particularly active and constructive year to improve the consistency, predictability, and transparency of its proceedings. The PTAB continued to handle a steady volume of *ex parte* appeals and AIA trials. In doing so, the Board successfully continued to reduce appeal pendency and meet all AIA trial deadlines without the need for extension.

Through the formation of POP (i.e., the Precedential Opinion Panel), the PTAB established a new process for vetting and streamlining the designations of precedential and informative decisions, which as of September 30, 2019, includes 18 precedential and eight informative decisions. The process is captured in a revised Standard Operating Procedure (SOP). The PTAB also commenced a pilot program for motions to amend in AIA trials, issued a notice about the use of reexamination and reissue proceedings as an alternative route to amend claims in an issued patent, and released a second update to its Trial Practice Guide to provide further written guidance as to how the Board handles various aspects of AIA trials. Moreover, the PTAB issued a final rule jettisoning the application of the "Broadest Reasonable Interpretation" or "BRI" claim construction standard and adopting, effective November 13, 2019, the federal court standard for construing patent claims in AIA trials, often referred to as the "Phillips Standard." The PTAB also issued a revised standard operating procedure for assigning judges to cases, as well as conducted a number of studies, including two concerning AIA trials related to pharmaceutical and biologics patents. Finally, the PTAB provided extensive judge training in several areas including, for example, on the USPTO's new 2019 Revised Patent Eligible Subject Matter Guidance.

Separately, the PTAB modernized several aspects of its operations. The PTAB improved its hearing facilities, either renovating the hearing rooms and/or adding audio/visual equipment. The PTAB also retired a legacy IT system called ACTS for docket management of appeals and transitioned to the PTAB End-to-End, a new IT system that already handles docket management for AIA trials. Through this transition, the PTAB took one more step forward in creating a single IT system to handle all papers from start to finish (hence, "end-to-end") for all types of cases in its jurisdiction.

B. *EX PARTE* APPEALS

The PTAB has continued to reduce the inventory of *ex parte* appeals by 1,988 cases, from 11,021 at the end of FY 2018 to 9,033 as of June 30, 2019. Additionally, the PTAB has continued to decrease the pendency of appeals from an average of 14.5 months at the end of FY 2018 to 13.3 months as of June 30, 2019. The PTAB achieved the decrease by continuing two programs designed to reduce pendency, called the "Quarterly Appeals Close-out" program and the "Technology Rebalancing" program. Under the Quarterly Appeals Close-out program, the PTAB focused judge resources on deciding those appeals pending for the longest period of time before the USPTO. By the end the September 2019, the PTAB successfully closed out all appeals filed in FY 2017 and is focused on appeals filed in FY 2018. Under the Technology Rebalancing program, the PTAB redirected some judge resources from deciding appeals in the electrical area where the pendency was steadily dropping the fastest to the business method area where the pendency was steadily increasing the fastest. In shifting judge resources in this manner, the PTAB successfully achieved the more uniform average pendency of 13.3 months across technology areas. More information about *ex parte* appeal statistics is available on the "Statistics" page of the PTAB website.

C. AIA TRIALS

The PTAB has continued to reduce the inventory of *ex parte* appeals by 2,376 cases, from 11,021 at the end of FY 2018 to 8,645 as of September 30, 2019. Additionally, the PTAB has continued to decrease the average pendency of appeals by 2% from an average of 15.1 months at the end of FY 2018 to 14.8 months as of September 30, 2019.

The number of AIA trial proceedings has declined by approximately 10% with 1,464 petitions filed as of September 30, 2019, as compared to 1,613 petitions filed in FY 2018. The 2019 AIA trial institution rate of 62% was similar to the FY 2018 rate of 60%. Since the time that PTAB began conducting AIA trials through September 30, 2019, it has declined to institute in approximately one-third of all petitions. Approximately one-third of all petitions have settled and approximately one-third of all petitions have had a final written decision. Of those cases that reached a final written decision, the PTAB has found all instituted claims patentable in 20% of cases; some instituted claims patentable in 18% of cases; and all instituted claims unpatentable in 63% of cases. Statistics about AIA trials are available on the PTAB website "Statistics" page.

D. PTAB PROCEDURE IMPROVEMENTS

The PTAB has made a number of revisions to the AIA trial procedures to enhance consistency, predictability, and transparency of the proceedings for the stakeholders, including updating its standard operating procedures for paneling cases and consistently issuing more precedential and informative decisions as described below. Additional information can be found at the "Resources and guidance" page of the PTAB's website.

1. FINAL RULE ON CLAIM CONSTRUCTION IN AIA TRIALS

The USPTO published a final rule in the Federal Register changing the claim construction standard applied during AIA trial proceedings. The final rule, which took effect on November 13, 2018, replaced the "broadest reasonable interpretation" or "BRI" standard with the federal court claim construction standard that is used to construe a claim in a civil action under 35 U.S.C. § 282(b), articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), and its progeny. Additionally, under the final rule, when construing a claim term in an AIA trial, the PTAB will take into consideration any prior claim construction determinations that were made by a district court, or the ITC, if that prior claim construction is timely made of record in the trial.

2. MOTION TO AMEND PILOT PROGRAM IN AIA TRIALS

The USPTO published in the Federal Register a notice of a pilot program for motion to amend practice and procedures in AIA trial proceedings. The pilot program, which commenced on March 15, 2019, provides patent owners with two options not previously available. Please refer to the Federal Register for the details of the pilot program, including motion to amend procedures that will be in effect for the duration of the pilot program.

3. FEDERAL REGISTER NOTICE ABOUT USE OF REEXAMINATION AND REISSUE PROCEEDINGS FOR AMENDING CLAIMS IN AIA TRIALS

In April 2019, the USPTO published a notice of information in the Federal Register regarding existing USPTO practice available to a patent owner during the pendency of an AIA trial proceeding pertaining to reexamination and reissue procedures available for amending claims involved in the trial. The notice summarized current practice regarding reexamination and reissue options in which patent owners may amend claims before and after the PTAB issues a

final written decision in an AIA trial proceeding. This notice also summarized information about factors that the PTAB considers when determining whether to stay or suspend a reissue proceeding, or stay a reexamination, that involves a patent involved in an AIA trial proceeding, and also when and whether to lift such a stay or suspension.

4. TRIAL PRACTICE GUIDE, JULY 2019 UPDATE

In July 2019, the USPTO published a second update to the AIA Trial Practice Guide containing additional guidance about trial practice before the Board. Among other things, the updated sections of the Trial Practice Guide include guidance on:

- Factors that may be considered by the Board in determining when additional discovery will be granted;
- The revised claim construction standard to be used in AIA trial proceedings;
- The submission of testimonial evidence with a patent owner preliminary response;
- Information to be provided by the parties if there are multiple petitions filed at or about the same time challenging the same patent;
- Motion to amend practice;
- Factors that may be considered by the Board in determining whether to grant a motion for joinder;
- Procedures to be followed when a case is remanded; and
- Procedures for parties to request modifications to the default protective order.

The USPTO published the original Trial Practice Guide in August 2012, concurrent with the promulgation of the AIA trial rules, and a first update to the Trial Practice Guide in August 2018.

5. STANDARD OPERATING PROCEDURE REVISIONS

a. Standard Operating Procedure 1 (SOP1): Assignment of Judges to Panels

Revised SOP1 explains the procedures for panel assignment of judges and for informing parties regarding panel changes. It also explains the process for designating panels with more than three judges, and notes that such panels should be rare and will only occur with the approval of the Director.

b. Standard Operating Procedure 2 (SOP2): Precedential Opinion Panel to Decide Issues of Exceptional Importance involving Policy or Procedure

Revised SOP2 sets forth two tracks under which the PTAB may issue precedential and informative decisions. Under the first track, a panel consisting of the Director, Commissioner for Patents, and PTAB Chief Judge may review a case at the rehearing stage and issue a precedential decision. The panel is called the Precedential Opinion Panel (POP) and grants review in particular cases upon request by the parties. The POP typically accepts review when a case presents an issue of exceptional importance to the Board.

Under the second track, the PTAB, upon approval of the Director, may designate a previously-issued decision as precedential or informative based upon nomination by the parties, the public, or the USPTO.

E. RECENTLY DESIGNATED PRECEDENTIAL AND INFORMATIVE DECISIONS

Under new SOP2, as of September 30, 2019, the PTAB has designated 18 precedential decisions and eight informative decisions within the first year. In the past, the PTAB issued only a handful of precedential and informative decisions every few years, so the PTAB is accomplishing its goal of providing more direction to the public about PTAB procedures. The PTAB also addressed a wide variety of topics in its newly designated precedential and informative decisions including deposition conduct, witness testimony at hearings, discretionary institution of AIA petitioners, real party in interest, submission of new evidence at the rehearing stage of an AIA trial, motions to amend, and patent eligible subject matter. The PTAB features all precedential and informative decisions on its "Decisions" website, grouped by date of designation as well as by topic.

F. STUDIES

The PTAB conducted two studies in FY 2019 concerning AIA trials and district court litigations for pharmaceutical patents (aka, Orange Book/Biologic Patent Study and Orange Book/Biologic Litigation Study), discussed in more detail below. The PTAB also collaborated with the Patent organization on two additional studies to investigate the timing for parallel proceedings at the USPTO (*e.g.*, AIA proceedings, reexamination, and reissue) involving issued patents (aka, Parallel Proceedings Study) and the frequency with which patent owners argue under 35 U.S.C. § 325(d) that the same or substantially the same prior art or arguments raised by a petitioner in an

AIA trial were previously considered by the USPTO (aka, 325(d) Study). These latter two studies are explained in greater detail in Section VI. D, below.

1. STUDY OF AIA TRIALS INVOLVING PHARMACEUTICAL PATENTS

In the "Orange Book/Biologic Patent Study," the PTAB reviewed the status of all AIA petitions filed against patents listed in the FDA's Orange Book and patents covering biologic products as of November 30, 2018. The PTAB found that Orange Book-listed patents are challenged in 5% of all AIA petitions and biologic patents are challenged in 2% of all AIA petitions. The PTAB further found that the trial institution rate for challenged Orange Book-listed patents was comparable to that of challenged patents overall, and that the institution rate for challenged biologic patents of 50% was lower than the institution rate for Orange Book-listed patents of 64%, and the overall institution rate of 66% challenged patents overall. Additionally, the PTAB found that the panels held all challenged claims in Orange Book-listed patents patentable in about 50% of all final written decisions, whereas the panels held all challenged claims in biologic patents patentable in about 25% of all final written decisions.

2. STUDY OF DISTRICT COURT LITIGATION INVOLVING PHARMACEUTICAL PATENTS

In the "Orange Book/Biologic Litigation Study," the PTAB reviewed AIA proceedings involving Orange Book-listed patents and biologic patents, as of November 30, 2018, to determine whether those patents also were involved in district court litigation. To identify the litigation, the PTAB used the parties' mandatory notices and the notice of a district court patent suit filed with the USPTO under 35 U.S.C. § 290. The PTAB found that 91% of Orange Book-listed patents challenged in the PTAB were involved in litigation, compared to only 47% of challenged biologic patents. Also, the PTAB focused on litigation between the petitioner and patent owner identified in the mandatory notices, finding that 66% of challenged Orange Book-listed patents were involved in such litigation, compared to only 29% of challenged biologic patents. Of those challenged Orange Book-listed patents, the PTAB found that 96% had an AIA petition filed during the litigation. For the corresponding Orange Book petitions, most were filed after the latest litigation between petitioner and patent owner began. The opposite was true for biologic petitions, as most were filed before any corresponding litigation. A copy of the studies is available in the "Special Reports" section of the PTAB's "Statistics" webpage.

G. TRAINING

In January 2019, the USPTO issued the 2019 Revised Patent Subject Matter Eligibility Guidance, and the Board conducted training for all judges on this Guidance. In addition, the Board conducted bi-monthly, continuing legal education-type training for judges and patent attorneys. This training covered a wide variety of legal topics, including the following: a seven-part series on AIA proceedings, several lessons on select aspects of patent law (*e.g.*, printed publications, use of drawings in claim construction), and legal writing.

H. STAKEHOLDER ENGAGEMENT

The PTAB hosted a number of educational programs throughout FY 2019 to update stakeholders on recent developments and receive feedback about their experience with the PTAB proceedings. The Board held several one-hour "Boardside Chat" webinars on topics such as new precedent, the motion to amend pilot program for AIA trials, and handling multiple AIA petitions. The Board likewise held its annual "Stadium Tour" events in collaboration with the Trademark Trial and Appeal Board (TTAB) to showcase both AIA trial and *ex parte* appeal proceedings. In April and October 2019, the PTAB and TTAB visited Georgia State University College of Law in Atlanta, Georgia and Northwestern Law School in Chicago, Illinois, respectively. Finally, upon invitation, the PTAB participated in 114 speaking engagements across the country in support of bar organizations and other stakeholders as of September 30, 2019. Notably, the PTAB participated in roadshows hosted by AIPLA in Seattle, Washington and for the AIPLA's PTAB Bench and Bar, in Alexandria, Virginia as well as the PTAB Bar Association's Annual Conference, in Washington, D.C.

Apart from completed outreach efforts, the PTAB has established plans to engage separately with the venture capital community and the independent inventor community in FY 2020, based upon PPAC's recommendation. The PTAB historically has had little contact with the VC community, and thus the PPAC believes that both the PTAB and VC's could benefit from an outreach opportunity to educate this sector of the technology/science community about the Board's operations, proceedings, and how the PTAB's decisions may impact their investments. Further, upon the PPAC's urging, the PTAB also has planned to increase engagement with the independent inventor community.

I. OPERATIONAL EFFORTS

The PTAB has taken steps to strengthen its infrastructure to better support *ex parte* appeals and AIA trial proceedings by enhancing IT capabilities and the usage of hearing facilities in the Regional Offices.

1. IMPROVEMENTS TO HEARINGS

Throughout FY 2019, the PTAB made several improvements to improve hearings for the public. The PTAB published a Hearing Guide on the "Hearings" webpage to assist parties in preparing for hearings. The guide compiled policies and procedures into a single source for easy access.

Next, the PTAB is in the process of updating the hearing rooms of the Regional Offices to make the presentation of arguments from these offices simpler and smoother. For example, the PTAB renovated the Denver hearing room to better utilize the space and is preparing to expand one of the Alexandria hearing rooms as well. The PTAB also is updating the audiovisual equipment available in the hearing rooms, including the installation of additional television screens, to enhance parties' ability to present argument. These audiovisual updates are complete in Denver and will continue for the other hearing rooms in the coming months.

Finally, at the PPAC's urging, the PTAB updated its hearing orders to give parties the option of requesting remote hearing viewing from any Regional Office. That way, counsel may appear in person at a hearing being held in Alexandria, for example, while a party representative may view the proceedings from an approved regional office viewing location such as San Jose. In making this change, the PTAB intends to increase accessibility of the hearings from coast to coast.

2. IT ENHANCEMENTS FOR *EX PARTE* APPEALS

In December 2016, the USPTO deployed a new IT system called PTAB End-to-End (E2E). At deployment, PTAB E2E was available only for AIA trial filings. In July 2019, the USPTO expanded the functionality of PTAB E2E to cover *ex parte* appeals and retired ACTS, a legacy IT system previously used for docket management of appeals. By aggregating docket management into a single IT system, the USPTO can better assign, manage, and track cases and workloads for appeals and AIA trials.

VI. SPECIAL PROJECTS

A. THE REGIONAL OFFICES—HOW THEY ARE MANAGED AND OPERATED

The PPAC conducted a review of the operations of the Regional Offices to better understand their contributions to making the USPTO's services more available to the patent user community. Section 23 of the AIA directed the Director to establish three or more satellite offices in the United States within three years of the law's enactment, subject to available resources. As specified in Section 23, the purposes of these satellite offices are to help the USPTO to:

- increase outreach activities to better connect patent filers and innovators with the USPTO;
- enhance patent examiner retention;
- improve recruitment of patent examiners;
- decrease the number of patent applications waiting for examination; and
- improve the quality of patent examination.

1. Management of the Regional Offices

Each Regional Office is headed by a Regional Director. The PPAC is aware that some in the user community are confused about the roles of the Regional Directors, who report to the Deputy Director, because their title is similar to the Patent Technology Centers Directors, who report to the Office of the Commissioner of Patents. The Regional Directors are not responsible for the patent examination or the PTAB operations in their regions. Unlike the Regional Directors, the Commissioner of Patents and members of the USPTO Executive Committee are in the chain of command to lead the agency should there be a vacancy in the Director or Deputy Director positions. There is very little in common between the roles and work of a Technology Center (TC) Director and that of a Regional Office Director. Granted, some TC Directors do outreach on a smaller scale through partnership meetings and occasional visits with their industry stakeholders. However, the primary focus of TC Directors is on the operation and administration of the examiners within their reporting chain, including those teleworking or based in the various regions. The TC Directors ensure that quality, production, timeliness and docket management goals are met and/or exceeded and that personnel issues are attended to as needed.

In contrast, the Regional Directors are not involved in the management and administration of the patent examiners, the trademark examining attorneys or the PTAB judges. Again, Regional Directors support, facilitate, coordinate and lead high-level engagements with community intellectual property and stakeholder leaders at the local, state and federal levels in their regions. The Regional Directors are also responsible for the facilities management of the Regional Office, in close coordination with the Chief Administrative Officer, and they weigh in on space, security and other facility-related issues. The Regional Directors are not responsible for the patent examination or the PTAB operations in their regions. These functions are led by the Commissioner of Patents and the PTAB Chief Judge, respectively.

B. ACTIVITIES OF THE REGIONAL OFFICES

The Regional Offices support, facilitate, coordinate and lead engagements with stakeholders in their respective regions. The Regional Offices function primarily as strategic outreach and educational centers to the user and intellectual property communities. The Regional Offices also act as conduits for feedback to USPTO senior leadership on important issues and areas of concern from stakeholders and state and local officials in their regions. They are responsible for assisting the USPTO in communicating and carrying out its mission, strategic plan and goals by providing resources, information, programs and services that benefit patent stakeholders specifically and the intellectual property community at large.

To this end, the Regional Offices primarily provide education and assistance to IP practitioners and inventors to assist these professionals and other stakeholders in remaining current on USPTO practice and procedure. Examples of USPTO services provided through the Regional Offices are the public search terminals providing access to USPTO search systems, examiner interview rooms that provide secure connections for examiner interviews, and hearing rooms where PTAB/TTAB proceedings can be held in any Regional Office location. The Regional Offices are directly responsible for the addition of new Patent and Trademark Resources Centers (PTRCs) in each of the regions, often reducing the time it takes for regional stakeholders to reach IP assistance. The Regional Offices offer walk-in assistance to any member of the public who has IP questions and needs assistance, often reducing the need for travel to the Alexandria campus. They also provide classes to the community on USPTO rules and policies.

The Midwest Office started an International Patent Drafting Competition due to its proximity and relationship with Canadian law schools and firms. The Rocky Mountain office premiered an IP Basics program completely delivered in Spanish for our Spanish speaking stakeholders and a "Fashionably IP" program for Denver Fashion Week, both of which were later adopted by the Texas Office. The Texas Regional Office premiered an IP Basics program delivered in Mandarin and premiered a Craft Beer program that was later adopted by the Rocky Mountain Office. The Silicon Valley Office created and debuted a Speed Dating for Startups program and a Disruptors v. Predators program, both of which are being considered for adoption by the other Regional Offices.

The USPTO is currently supporting the PTAB proceedings (hearings, appeals, trials) in each of the Regional Offices. This capability is not well advertised, and the hearing rooms are currently underutilized. PTAB is updating the Hearing Notification Form to make it clear that parties can request to appear in a specific USPTO location (each Regional Office and at Headquarters). This will not guarantee that a judge is physically located in the desired location at any particular hearing, however, high quality broadcast tools are available to support remote proceedings. Additionally, the PTAB is updating the participation guidelines to specifically provide the option that in-house counsel clients may view a proceeding from any of the Regional Offices.

The USPTO engages Members of Congress and state and local elected officials in a variety of ways. The Regional Directors, at the direction of the Office of Governmental Affairs (OGA), lead outreach efforts in their regions with the local offices of Members of Congress in their region to advance the Agency's mission and highlight the services and resources available at the Regional Offices, and more generally from the USPTO, to their constituents.

The Regional Offices also serve as an important recruiting and retention tool that enhances the USPTO's ability to compete for nation-wide talent. When the Regional Offices were first conceived, the USPTO was challenged by having a single location in an area that limited recruitment to only those willing to live in, and, in most cases, relocate to the Washington, D.C. metropolitan area. Now, through a nationwide workforce made possible by full-time teleworking employees and Regional Offices, the USPTO is able to enhance the candidate pool of examiners, specifically including highly qualified candidates from industries not traditionally located in the Washington, D.C. region.

C. THE SUCCESS ACT—MAKING THE PATENT RIGHT MORE ACCESSIBLE

On October 31, 2018, President Trump signed into law the SUCCESS Act of 2018 (P.L. 115-273). The PPAC met with the Office of Governmental Affairs and the Chief Economist on the report and recommendations called for by the SUCCESS Act. The Act requires the Director of the USPTO, in consultation with the Administrator of the U.S. Small Business Administration (SBA), to provide a report to Congress on publicly available data on patents applied for and obtained by women, minorities, and veterans. The report must also identify the benefits of applying for and obtaining patents by these groups, and it must also propose legislative recommendations for how to promote participation and increase the number of women, minorities and veterans in applying for and obtaining patents. The report must be submitted by October 31, 2019. The Act also extended the USPTO's fee-setting authority by 8 years.

The USPTO has reached out to individuals, businesses, and non-profit organizations to gather information on patenting by these underrepresented groups and to hear recommendations on how to increase entrepreneurship and utilization of the patent system by these groups. Additionally, the USPTO published a notice in the Federal Register requesting written comments from the public that were to be submitted by June 30, 2019. The USPTO also held public hearings in Alexandria, VA, San Jose, CA, and Detroit, MI in May and June of this year. The USPTO received over 70 written comments and over 50 people attended the hearings collectively, with approximately 35 individuals providing comments. The USPTO reviewed and analyzed this information as part of its study and report as required by the SUCCESS Act.

The USPTO has also engaged with other U.S. Department of Commerce bureaus and consulted with the Small Business Administration and the Department of the Treasury, as well as other U.S. government agencies, on data sharing or analysis relevant to the number of and benefits from patents applied for and obtained by women, minorities, and veterans.

D. PTAB-PATENTS COLLABORATION—INTERACTION BETWEEN THE PATENTS FUNCTION AND PTAB PROCEEDINGS

The PPAC conducted an inquiry into how and when the PTAB and the Patents organization work together when there are parallel proceedings at the PTAB and the Patents organization and also when the PTAB is reviewing arguments that were already presented during examination. The focus here is the certainty of the patent right once a patent is granted and the ability of the

Office to operate as "one USPTO." In response to the PPAC inquiry, the PTAB collaborated with the Patents organization to conduct two studies concerning an overlap between the AIA trials and examination activities in FY 2019.

1. PARALLEL PROCEEDINGS

In the first study, the USPTO investigated the timing for parallel proceedings at the USPTO (*i.e.*, AIA proceedings in conjunction with a reexamination or reissue) involving issued patents. The USPTO analyzed 5,056 patents challenged in the AIA proceedings and any reissue and reexamination proceedings for those challenged patents. The study data includes all patents challenged in AIA proceedings from the start of AIA filings (September 16, 2012) through mid-year FY 2018 (*i.e.*, March 31, 2018) and all reexaminations or reissues for those patents filed through mid-year FY 2018. The USPTO found that the vast majority of patents challenged in AIA proceedings (89%) have not been the subject of a reexamination or reissue. Of those that were subject to parallel proceedings, the USPTO found that in 71.5% of all patents that had been the subject of both a reexamination request and an AIA petition, the reexamination request was filed before the AIA petition. By contrast, the USPTO found that in 70.3% of all patents that had been the subject of both a reissue application and an AIA petition, the reissue application was filed on or after the AIA petition. Also, the USPTO found that there were about four times as many patents that had an AIA petition and a reexamination request as patents that had an AIA petition and a reissue application.

2. ARGUMENTS PREVIOUSLY CONSIDERED

In the second study, the USPTO assessed the frequency with which patent owners argue that the same or substantially the same art or arguments raised by a petitioner in an AIA trial were previously considered by the USPTO. Under 35 U.S.C. § 325(d), the Board has discretion to deny institution in such cases. The PTAB identified only 378 cases (6% of all petitions) where the patent owners raised Section 325(d) arguments based upon prior examination from September 16, 2012, to April 28, 2018. When the PTAB addressed the Section 325(d) issue, the Board denied institution 23% of the time (87 cases). When the Board was not persuaded by the patent owners' Section 325(d) arguments, about 2/3 of the time it was because the prior art in the petition was non-cumulative art not used in a rejection, and about 1/3 of the time it was because the petitioner brought forth additional art, arguments, or evidence not considered in examination. To provide clarity and predictability for the closer cases when Section 325(d) arguments are

raised, on August 2, 2019, the Board designated as precedential the portion of *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, Case IPR2017-01586, Paper 8 (Dec. 15, 2017), that discusses the factors that a panel will consider when asked to make a Section 325(d) discretionary denial. This decision is available on the PTAB's "Decisions" webpage.

E. THE OFFICE OF ENROLLMENT AND DISCIPLINE—UPDATE ON THE DIVERSION PROGRAM

The PPAC continued its review of the new Office of Enrollment and Discipline (OED) two-year Pilot Diversion Program (the Diversion Program) launched in November 2017. The Program provides relief for practitioners who have engaged in minor misconduct where the practitioner may be suffering from an addiction, health or negligent management issue. The program is called a "Diversion Program" because the practitioner's discipline, as a result of the misconduct, is diverted where they can take restorative steps towards rehabilitation or have remedied a management issue.

Because it is a new program, the PPAC continued its participation to determine the success of the program and whether the recommendations in last year's PPAC Annual Report were implemented.

Since OED's Diversion Program commenced, one practitioner has successfully completed the term of the diversion agreement, and the other is currently under diversion, which will be completed in December 2020. Recently, one other individual enrolled in the Diversion Program. Although OED has identified six other instances in which a practitioner's misconduct was attributable to a substance abuse or similar issue, in such cases diversion was not offered because the misconduct did not meet the criteria for participation (*i.e.*, the practitioner was convicted of a felony – which constitutes a "serious crime" – or the practitioner's conduct involved dishonesty or theft), or the individual did not show any interest or desire to participate in the Program. To date, six individuals have been considered and three have enrolled.

While the criteria for Diversion is specific and strict, nonetheless, OED has continued to engage and educate practitioners of the existence of the Diversion Program. OED has included information about the Diversion Program in its regularly scheduled presentations to law students and practitioner seminars and webinars, and has participated in presentations regarding the program to the Federal Circuit Bar, the IP law section of the Montana Bar, the Midwest

Intellectual Property Law Institute, the Washington State Bar Association, the Annual Patent Law Institute, Giles S. Rich Inns of Court, and the ABA-IPL Section Annual Meeting on Attorney Wellness. In addition, OED will participate in the IPO Annual Meeting slated for September 2019. Accordingly, OED took note of the PPAC's recommendation to "continue its outreach program and expand its visibility by attending conferences and otherwise educating the practitioner community on the Program."

In addition, the PPAC recommended that "OED develop an explanation of the program that can be sent to all practitioners facing misconduct discipline so that they are aware of the Program." Accordingly, OED has compiled a brochure to accompany requests for information to practitioners.

VII. INTERNATIONAL COOPERATION, WORK SHARING, POLICY DEVELOPMENT AND OUTREACH

Congress granted a variety of powers and duties to the USPTO on matters affecting international intellectual property (IP) protection and policy. The Office of Policy and International Affairs (OPIA) supports the Under Secretary and Director in fulfilling the USPTO's statutory mandate to advise the President (through the U.S. Secretary of Commerce) and all federal agencies on all IP policy issues, to conduct programs and studies on IP, and to work with IP offices and intergovernmental organizations worldwide. OPIA's work includes advising the U.S. Secretary of Commerce and the administration on the full range of IP policy matters, providing educational programs on IP, leading negotiations on behalf of the United States at the World Intellectual Property Organization (WIPO), providing expert assistance in negotiating the IP provisions of international trade agreements and advising on their implementation, managing the IP Attaché Program through which IP experts are placed in cities throughout the world to promote appropriate IP protection, engaging with Congress and other federal agencies on IP legislation, and performing and supporting empirical studies of the economic impacts of IP and innovation.

Additionally, reflecting the USPTO's strong commitment to working with global stakeholders and IP offices to increase quality and efficiency within the complex processes of international patent rights acquisition, the Office of International Patent Cooperation (OIPC) was established in 2014. This work is carried out by two groups, International Patent Legal Administration (IPLA) and International Programs. OIPC consolidates functions previously spread through the patent organization in one office with the aim of establishing cohesion and resource support for these activities.

Over the past year, the PPAC has worked collaboratively with OIPC and OPIA to gain a better understanding of their roles, provide insight and suggestions on their signature initiatives, and identify potential avenues of support for their challenges. In this section, the PPAC comments upon one of these signature initiatives and one of these challenges, the IP5 Patent Cooperation Treaty Collaborative Search and Examination Pilot and the diplomatic rank of IP attachés, respectively.

A. PCT COLLABORATIVE SEARCH & EXAMINATION PILOT

OIPC administers a variety of programs for improving international patent protection, including the IP5 Patent Cooperation Treaty (PCT) Collaborative Search and Examination Pilot (CS&E). CS&E is a cooperative program among the five largest intellectual property offices in the world: USPTO, European Patent Office, Japan Patent Office, Korean Intellectual Property Office, and the National Intellectual Property Administration of the People's Republic of China. These offices are collectively known as the IP5 Offices.

Applicants who file international applications under the PCT are potentially eligible for CS&E. As explained below, CS&E gives applicants who meet the criteria of the program two tremendous benefits. The first benefit arises during prosecution: applicants are given an opportunity to be much better informed about the potential scope of patent protection available for their inventions before having to make expensive decisions. The second benefit arises after issuance: applicants are given a greater degree of certainty in the quality of the patent and its ability to withstand potential scrutiny in other forums.

A brief comparison of the normal PCT process to the CS&E process will be helpful for demonstrating how these benefits arise. An applicant who files a normal PCT application designates a single PCT national office, such as one of the IP5 Offices, as the international searching authority (ISA). The ISA conducts a search of the prior art. The normal PCT applicant then receives an international search report (ISR) and a non-binding opinion on patentability, referred to as the Written Opinion, from the single office chosen as ISA. In contrast, the CS&E applicant receives much more. The CS&E applicant chooses one of the five IP5 Offices to be the main ISA. The main ISA conducts a search of the prior art as usual and prepares a provisional ISR and Written Opinion. The main ISA then shares the provisional ISR and Written Opinion with each of the other four IP5 Offices and solicits their contributions. The main ISA thereafter produces a final ISR and Written Opinion taking into account all of those contributions. As a result, the CS&E applicant receives an ISR and Written Opinion based on the contributions from all five IP5 Offices, rather than from the single office chosen as ISA.

The first benefit – the prosecution benefit – arises from the timing of the issuance of the ISR and Written Opinion. The PCT process includes two phases, an international phase and a national phase. The international phase is a very cost-effective mechanism for preserving patent rights in most of the world's jurisdictions for a limited time. In contrast, the national phase tends to be

significantly more expensive, with prosecution having to be conducted in each country (or region) where patent protection is sought. Typically, an ISA completes an ISR and Written Opinion and makes them available to the applicant well before the deadline for entering into the national phase. This timing is critically important. The ISR and Written Opinion are extremely helpful documents that inform applicants about potential prior art challenges to patentability. They help guide applicants on making cost-benefit decisions on whether (and, if so, how) to continue to seek patent protection. For example, a search revealing significant prior art might, when coupled with adverse business factors, persuade an applicant to abandon an application and save the expense of prosecution in the national phase in favor of seeking patent protection on another invention. A CS&E ISR and Written Opinion represents a view on patentability taking into account the contribution of five offices, as opposed to just a single office, and thus helps applicants make much more informed decisions on patentability before entering the national phase.

The second benefit – the post-issuance benefit – arises from the differences in the IP5 Offices. Generally, each of the IP5 Offices has a unique approach to patent search and examination. For example, each of the IP5 Offices hosts a different collection of prior art documents and has different language skillsets. A CS&E ISR and Written Opinion takes advantage of all of these databases and skillsets and generates a much more complete prior art search and examination than normal. Such a search and examination are an important part of issuing quality patents that can stand up to scrutiny if challenged in other forums.

The CS&E began on July 1, 2018 and is slated to run through June 30, 2020, for a total of two operational years. During each operational year of the CS&E, each of the IP5 Offices will accept fifty applications from eligible PCT applicants. As long as space is available, PCT applicants who are interested in participating in the CS&E only need to file a petition with a participating IP5 ISA to be eligible; a program fee is not required. As of this writing, the CS&E has been extremely well subscribed by PCT applicants, with each of the IP5 Offices reaching (or almost reaching) 50 eligible applications in the first operational year. The PPAC commends the USPTO on the establishment of the CS&E and its collaborative work with the four other IP5 Offices. The PPAC supports the continuation of the CS&E through the end of the pilot period.

B. DIPLOMATIC RANK OF IP ATTACHÉS

OPIA oversees a variety of international programs, including the IP attaché program. Currently, the IP attaché program includes 13 attaché posts based in 10 foreign countries. An IP attaché is a representative of the USPTO who is stationed in a foreign host country and charged with promoting the USPTO's IP policies, initiatives, and goals in the foreign host country and surrounding region. IP attachés are IP experts who come from the ranks of the USPTO as well as law firms.

IP attachés regularly interact with government officials in their foreign host countries and surrounding regions in three different settings. They provide training on IP issues to officials who are unfamiliar with IP and have questions about IP policies or practices. Also, they advocate with officials for improved IP protection benefitting all stakeholders, including U.S. stakeholders seeking patent protection in foreign countries. Additionally, they assist U.S. stakeholders with IP issues in foreign countries and intercede with officials on their behalf. For example, IP attachés help U.S. stakeholders navigate the IP legal systems of foreign countries and work with officials in those countries to resolve systemic issues.

Over the past year, the PPAC has learned that the effectiveness of the IP attachés is sometimes hampered by their diplomatic rank. As brief background, the U.S. Department of State assigns a diplomatic rank to all representatives of the U.S. stationed in foreign countries. Currently, the U.S. Department of State has assigned IP attaches the diplomatic rank of First Secretary. IP attachés have advised the PPAC that they need an elevation in diplomatic rank of one level – to Counsellor – to be more effective. IP attachés report that such an elevation in rank will give them ready access to government officials in foreign countries who have authority on IP issues. Currently, IP attachés do not have this access: government officials in foreign countries holding the same diplomatic rank as IP attachés do not have authority on IP issues, and government officials in foreign countries having authority hold higher rank and will not meet with IP attachés or other representatives holding lower rank. Also, as a point of international comparison, the PPAC has learned that the governments of China, France, and Japan place their own IP attachés in the United States. China and France give their IP attachés the rank of Counsellor, while Japan provides a rank that does not fall within the hierarchy of internationally recognized diplomatic rank (and thus the rank cannot be readily compared to either First Secretary or Counsellor).

U.S. industry supports the IP attaché program and recognizes the challenge of diplomatic rank facing IP attachés. Indeed, in July of this year, twenty-three industry organizations sent a joint letter to the U.S. Secretary of State and the U.S. Secretary of Commerce expressing their support for the IP attaché program. The PPAC commends the USPTO on its receipt of support from U.S. industry for the IP attaché program. In recognition of this support, and with attention to the diplomatic rank given by foreign governments to their IP attachés based in the United States, the PPAC joins the request made by U.S. industry for a suitable elevation in diplomatic rank of the IP attachés.

VIII. LEGISLATIVE UPDATES

A. INTRODUCTION

Congress has been active on patent issues since the start of the 116th Congress, including introducing legislation and circulating draft legislation affecting various aspects of substantive patent law. Congress has also been active in examining USPTO operations and has held hearings on oversight of the USPTO, patent examination quality, and on the state of patent subject matter eligibility.

B. THE SUCCESS ACT OF 2018

The PPAC is pleased that the SUCCESS Act of 2018 (P.L. 115-273) was signed into law on October 31, 2018. The law extended the USPTO's fee-setting authority by 8 years. The law also requires the Director in consultation with the Administrator of the U.S. Small Business Administration (SBA) to provide a report to Congress on publicly available data on patents applied for and obtained by women, minorities, and veterans. The report must also identify the benefits of applying for and obtaining patents by these groups, and it must also propose legislative recommendations for how to promote participation and increase the number of women, minorities and veterans applying for and obtaining patents. The report was submitted to the House Judiciary and Small Business Committees and the Senate Judiciary and Small Business and Entrepreneurship Committees on October 31, 2019.

C. CONGRESSIONAL HEARINGS

The Director provided testimony and responded to questions at an oversight hearing of the USPTO before the Senate Judiciary Subcommittee on Intellectual Property in March 2019 and at a similar hearing before the House Judiciary Subcommittee on the Courts, Intellectual Property and the Internet in May 2019. Issues discussed at the oversight hearings included the current state of patent subject matter eligibility (Title 35, Section 101), the USPTO's January 2019 Patent Subject Matter Eligibility Guidance, pharmaceutical patents, PTAB post-grant review proceedings, China intellectual property concerns (including the surge in trademark filings from China), anti-counterfeiting efforts, IT modernization, promoting diversity in inventorship and STEM fields, and intellectual property protection provisions in international trade agreements.

Commissioner Hirshfeld testified before the Senate Judiciary Subcommittee on Intellectual Property in October 2019. Issues discussed at the hearing focused on patent quality.

The Senate Judiciary Subcommittee on Intellectual Property held three days of hearings in June 2019 on the state of patent subject matter eligibility that included forty-five witnesses from diverse backgrounds including government, the judiciary, academia, bar associations, various technology sectors and public interest groups. Members solicited feedback on draft legislation and the problems different industries are facing with patent eligibility laws in the U.S.

In March 2019, the House Judiciary Subcommittee on the Courts, Intellectual Property and the Internet held a hearing on diversity in the patent system where witnesses discussed the USPTO's study on the lack of diversity in patent applicants and what could be done to increase participation by underrepresented groups. A similar hearing was held before the Senate Judiciary Subcommittee on Intellectual Property in April 2019. Both hearings highlighted the USPTO's Inventor Assistance Program as well as its pro bono and law school clinic programs.

In April 2019, the Senate Committee on Appropriations Subcommittee on Commerce, Justice, Science and Related Agencies held a hearing to review the U.S. Department of Commerce's FY 2020 budget. The Director represented the USPTO on the panel of witnesses comprised of the head of each of the Department's bureaus.

D. PENDING LEGISLATION

The following is a partial summary of some of the substantive patent law-related legislation introduced during the 116th Congress:

- S. 2281/H.R. 4075. The Inventor Diversity for Economic Advancement (IDEA) Act of 2019. These bills would amend Title 35 to require the voluntary collection of demographic information for patent applications by the USPTO and require a report on the demographic information.

- S. 2178. Prevent Abuse of the Legal System (PALS) Act. This bill would impose certain requirements on entities listed on the Entity List from the Department of Commerce's Bureau of Industry and Security in infringement actions and impose restrictions on the sale or license of patents to or by such an entity.

- S. 1416. Affordable Prescriptions for Patients Act of 2019. The bill amends the Federal Trade Commission Act to limit the number and types of patents that can be asserted in an infringement action under Section 271(e).

- S. 440. Preserving Access to Cost Effective Drugs (PACED) Act. This bill would amend Title 35 and Title 19 to provide that a patent owner may not assert tribal sovereign immunity as a defense in certain actions before the USPTO and ITC and, if the patent owner is a foreign state, then PTAB must determine whether that foreign state is immune from its proceedings.

- H.R. 3199. Terminating the Extension of Rights Misappropriated (TERM) Act of 2019. This bill would create a presumption that patents listed in the FDA's Orange Book or a patent under the BPCIA have been terminally disclaimed over the earliest expiring patent.

- S. 2082/H.R. 3666. Support Technology and Research for Our Nation's Growth and Economic Resilience (STRONGER) Patents Act of 2019. These bills would amend PTAB procedures and rules (including codifying the U.S. Court of Appeals for the Federal Circuit's decision in *WiFi One v. Broadcom*), include universities and non-profits as eligible micro-entities, and create a revolving fund for the USPTO fee revenue outside of the appropriations process.

- H.R. 108. Targeting Rogue and Opaque Letters Act of 2019. This bill provides that certain bad faith communications and/or demand letters in connection with the assertion of a U.S. patent are unfair or deceptive acts or practices and directs the Federal Trade Commission and the state Attorneys General to impose appropriate fines.

The PPAC reviews and advises the USPTO on proposed legislative and administrative changes, including those aimed at patent quality issues, as well as other adjustments to the patent laws. The PPAC will continue to monitor and consult with the USPTO on any such changes.

MARYLEE JENKINS, CHAIRPERSON

Ms. Jenkins is a partner in the New York office of Arent Fox LLP and served as head of the New York office's Intellectual Property Group for over twelve years. Marylee counsels Fortune 500 companies, international businesses and emerging technologies regarding intellectual property litigation and strategies, portfolio enforcement and management and technology development and protection. Her clients represent a variety of industries including computer hardware, software, Internet and various computer-related technologies; electrical and electromechanical devices and systems; the information and financial sectors; biotechnology; consumer products; fashion design; health care; medical devices; food and beverage; and real estate and construction. Ms. Jenkins is a past Chairperson of the American Bar Association's Section of Intellectual Property Law and a past President of the New York Intellectual Property Law Association. She also recently served a member of the ABA Standing Committee on the Federal Judiciary, which evaluates the qualifications of candidates for nomination by the President of the United States to the federal bench. She is currently Co-Chairperson of New York Law School's Innovation Center for Law and Technology Advisory Board. Ms. Jenkins received a bachelor's degree in mechanical engineering from Columbia University School of Engineering and Applied Science; a bachelor's degree in physics from Centre College of Kentucky; and a law degree from New York Law School. She is serving her second term as a PPAC member.

JULIE MAR-SPINOLA, VICE CHAIRPERSON

Julie Mar-Spinola is Finjan Holdings, Inc.'s Chief IP Officer and Vice President of Legal Operations. She oversees the Company's revenue-based and legal operations, including the Company's IP and cyber technology innovations, enforcement programs, best practices, public policy initiatives, and mentorships. Ms. Mar-Spinola is also a member of the Board of Directors for product subsidiary, Finjan Mobile, Inc., and subsidiary, Finjan Blue, Inc.

Ms. Mar-Spinola has dedicated nearly her entire career in intellectual property law, with emphasis on patents, technology, policy, and mentorship in these areas for the next generations of IP professionals. She has successfully represented high technology companies of all sizes and business models, including significant technology companies and individual inventors alike, in the courts and ITC. Prior to joining Finjan, Ms. Mar-Spinola has served as General Counsel or VP of Legal for several Silicon Valley companies, including Kleiner Perkins-backed thin-film solar start-up, Alta Devices, Inc.

Ms. Mar-Spinola is a co-founder of the renown women's organization, ChIPs, a global 501(c)(3) non-profit corporation dedicated to advancing women at the confluence of law, technology and regulatory policy, and served as ChIPs' Chairwoman from 2005 through 2016. Since 2011, Ms. Mar-Spinola has served as a court-appointed mediator for the US District Court for the Northern District of California, specializing in complex patent disputes. In 2014 she joined the High Tech

Advisory Board of her alma mater, Santa Clara University School of Law. In 2015 Ms. Mar-Spinola was appointed by the U.S. Secretary of Commerce to serve on the prestigious Patent Public Advisory Committee (PPAC), which reviews the policies, goals, performance, budget and user fees of the USPTO operations and advises the Director on these matters. Ms. Mar-Spinola was appointed to serve as the Vice Chair of the PPAC through the 2019 term.

Ms. Mar-Spinola is a member of the California State Bar, the Federal Circuit Bar, the U.S. Supreme Court Bar, and a licensed Patent Attorney, and is dedicated to the rise and advancement of all under-represented classes of inventors and innovators in the science, technology, engineering, arts, and math (aka STEAM).

MARK GOODSON

Mr. Goodson is the founder and principal engineer of Goodson Engineering in Denton, Texas, where he leads a team of professional engineers with specialties in electrical, mechanical, and fire protection engineering. Mr. Goodson is a consultant for public sector agencies, as well as commercial and industrial concerns. He is experienced in electrical death and injury analysis, CO death analysis, and mechanical and electrical fire causation. He has authored more than 40 professional articles. He was the first engineer to serve on the Texas Electrical Board. Mr. Goodson served as a Court Special Master in Dallas from 1989-1991. He is the engineer appointed by the State of Texas in 2013 to serve on the Texas Fire Marshal's Science Advisory Workgroup (SAW), where fire-related criminal convictions are being reviewed for accuracy of scientific evidence. In 2014, Mr. Goodson was appointed to the US Dept. of Commerce NIST panel on forensic sciences (NIST – OSAC). In 2015, UL named him as the electrical engineer serving on the National Institute of Justice research team on fire forensics. Within the NFPA. Mr. Goodson serves on panels for Fire Investigation 1033 and also Fire Investigation Units. He has testified in excess of 500 instances as an expert witness. Mr. Goodson holds a BSEE from Texas A&M, and studied forensic medicine at UT Southwestern. He is a licensed PE in 14 states. Mr. Goodson is an independent inventor, has been issued 18 patents and has 8 more pending. Mr. Goodson is serving his second term as a PPAC member.

DAN LANG

Mr. Lang is vice president, intellectual property, and deputy general counsel at Cisco Systems located in San Jose, California. He leads a team responsible for Cisco's intellectual property program, including portfolio development, patent licensing and acquisition, and policy. He has overall responsibility for leading a telecommunications industry portfolio of over 12,000 U.S. patents. Mr. Lang is also registered to practice before the USPTO. Mr. Lang is serving his second term as a PPAC member.

JENNIFER CAMACHO

Ms. Camacho is the Chief Legal Officer for Torque Therapeutics, Inc., a cancer immunotherapeutics company. She is responsible for all aspects of the company's legal affairs and intellectual property. Before joining Torque, she was the Chief Legal Officer for Gen9, Inc. from 2014 until its acquisition in January 2017. Previously, Ms. Camacho was a partner in the international law firms of Proskauer Rose, LLP and Greenberg Traurig, LLP where she represented multiple clients in the life sciences industry, including biotechnology and synthetic biology companies, pharmaceutical and medtech companies, investment banks, venture capital firms, and other industry stakeholders. Ms. Camacho has been recognized for her work in the fields of intellectual property and life sciences law and has multiple awards and honors, including the Tech Luminary and Innovation All-Star Award from Boston Business Journal and Mass High Tech. She received her bachelor's degree in Cell and Structural Biology from the University of Illinois, and her law degree from Boston College Law School. Ms. Camacho is currently serving her second term as a PPAC member.

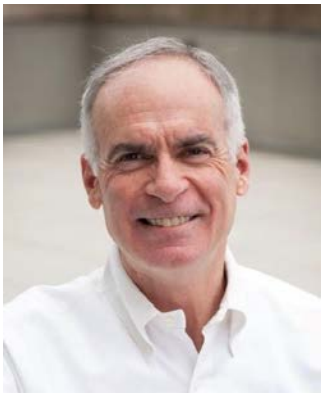
JEFFREY SEARS

Mr. Sears is 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. Mr. Sears 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. Mr. Sears is serving his first term as a PPAC member.

BERNARD J. KNIGHT, JR.

Mr. Knight is a consultant, expert witness and founder of BK Consulting: Expert Witness: Patents, providing consulting services on USPTO rules and regulations, post-grant proceedings, and OED disciplinary matters. He also is a career coach and counselor, and is a licensed professional mental health counselor in Washington, D.C. Mr. Knight was a partner and senior counsel practicing complex patent litigation at the law firm of McDermott Will & Emery LLP from 2013 to 2017. Prior to joining McDermott, Mr. Knight served as General Counsel for the USPTO from 2010 to 2013. As General

Counsel of the USPTO, he led the development and legal review of the regulations implementing the new inter partes review, post-grant review, business method review and derivation proceedings, as well as the regulations changing the United States to a first-inventor-to-file system. Mr. Knight previously served as Acting General Counsel of the U.S. Treasury at the height of the financial crisis. From 2001 to 2006, he was Deputy General Counsel for the USPTO. Mr. Knight began his government career in 1991 at the Department of Justice, Tax Division, where he served for 10 years. Mr. Knight is serving his first term as a PPAC member.



BERNARD J. CASSIDY

Mr. Cassidy recently served as General Counsel at Juno Therapeutics Inc., a startup cancer immunotherapy company, where he advised Juno through the IPO process until its acquisition by Celgene Corporation in 2018. He is a nationally recognized expert on patent licensing and patent policy, having testified twice on these topics before Congress. Prior to his work at Juno, Mr. Cassidy served as Executive Vice President, General Counsel, and Secretary of Tessera Technologies Inc. and President of Tessera Intellectual Property Corporation. Mr. Cassidy was also Senior Vice President, General Counsel, and Secretary of Tumbleweed Communications Corp. He practiced law at Wilson, Sonsini, Goodrich & Rosati and at Skadden, Arps, Slate, Meagher & Flom, and was a Law Clerk to the Honorable John T. Noonan, Jr. on the U.S. Court of Appeals for the Ninth Circuit. Mr. Cassidy received his J.D. from Harvard Law School, where he was an editor of the *Harvard Law Review* and a Research Assistant to Professor Arthur R. Miller. He is a visiting researcher at Harvard Law School during the 2002 spring semester and teaches a course on Biomedical Law and Policy at the Seattle University School of Law. Mr. Cassidy is serving his first term as a PPAC member.

STEVEN CALTRIDER

Mr. Caltrider is Vice President and General Patent Counsel for Eli Lilly and Company. He also serves as a member of the Patent Public Advisory Committee at the USPTO. He has extensive litigation experience in the leading 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 also experienced in managing global teams of attorneys and staff on a wide range of intellectual property (IP) matters, from patent procurement to technology acquisitions and data security. His current responsibilities include patent (global litigation and procurement), trade secret, copyright, and trademarks. Mr. Caltrider received a bachelor's degree in chemical engineering from Purdue University and a law degree, summa cum laude, from Indiana University Robert H. McKinney School of Law. Mr. Caltrider is serving his first term as a PPAC member.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