UNITED STATES PATENT AND TRADEMARK OFFICE

PUBLIC HEARING ON THE "SUCCESS ACT"

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USPTO:

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P R O C E E D I N G S

(9:00 a.m.)

MR. TOOLE: All right. Good morning everybody, and welcome to the first public hearing for the Success Act. My name is Andrew Toole. I am the chief economist here at the US Patent and Trademark Office, and I have the distinct pleasure this morning of introducing our deputy undersecretary for intellectual property and our Deputy Director of the US Patent and Trademark Office, Laura Peter, who will be providing our introductory remarks.

So before assuming her role here, Deputy Director Peter was the Deputy General Counselor of A10 Networks. In that role she helped shepherd the company through its initial public offering and oversaw daily legal matters such as litigation, intellectual property, portfolio development, and commercial agreements. Ms. Peter has practiced law for over 20 years and her former positions include vice president and general counsel at Immersion Corporation, Assistant

General Counsel and director of intellectual property at Foundry Networks.

Ms. Peter also holds an impressive array of degree; a bachelor of science in industrial engineering from Cornell University, a masters in public policy from University of Chicago, a JD from Santa Clara University School of Law, and an LLM from -- in international business from King's College, London. So ladies and gentlemen, please join me in welcoming USPTO Deputy Director, Laura Peter.

MS. PETER: Thank you.

MR. TOOLE: Thank you.

MS. PETER: Thanks so much. Thanks so much Andy for that kind introduction. And it's a delight to be here this morning and talk to you about how we can further expand the innovation ecosphere. Women constitute over half of the United States population and get their participation in the general workforce is almost -- was almost -- excuse me -- was almost two-thirds in 2016. Yet women's participation in

STEM fields and in the IP system lag far behind their male counterparts.

In the United States, less than one quarter of the STEM workforce comprises women, plus half these women who work in the STEM fields leave after 12 years, most within the first five years. The participation of women as inventors named on US patents is even lower.

On February 11, 2019, the USPTO released its report entitled Progress and Potential; a Profile of Women Inventors on US Patents. This study found that although the number of patents with at least one woman increased from about 7 percent in the 1980s, to 21 percent in 2016, women inventors still comprised only 12 percent of all inventors on patents granted in 2016. We can and should do better than that.

If we are to maintain our technological leadership, the United States cannot continue to compete with so much talent left untapped in order to unleash this talent, industry, academia, and universities and governments must work together to

address these issues and drive toward real progress.

We at the United States patent and trademark office are committed to making opportunities for innovation available to everyone. A recent Harvard study found that increasing invention rates among women, minorities, and children from low income families could quadruple the rate of United States innovation. Clearly, unleashing this untapped potential holds tremendous benefit for all Americans.

The Trump administration and Congress have recognized this crucial issue and the need for action. And so on October 31, 2018, president Trump signed into law the Study of Underrepresented Classes Chasing Engineering Science Success Act of 2018, also known as the Success Act. The Success Act requires that the director of the United States patent and trademark office in consultation with the administrator of the United States Small Business Administration,

also the SBA, to provide Congress with a report on publicly available patent data regarding the representation of women, minorities, and veterans, and make legislative recommendations.

Specifically, the recommendation should be provided on how to promote the participation of women, minorities, and veterans in entrepreneurial activities, and how to increase the number of women, minorities, and veterans who apply for and obtain patents. In accordance with the Success Act, the USPTO is currently gathering information on the participation of women, minorities, and veterans in patent and entrepreneurship activity.

We are engaging with the Department of Commerce bureaus and consulting with United States government agencies including the SBA and the Department of the Treasury regarding the possible sharing of data and analysis relevant to the number of patents applied for and obtained by women, minorities, and veterans and the benefits there from.

Broadening the innovation ecosphere to

include underrepresented groups is critical to inspiring novel inventions, driving economic growth, and maintaining America's global competitiveness. So let's all work together to unleash this untapped potential. Today's event represents one step in advancing this dialogue. Everyone, individuals, businesses, nonprofit organizations, can contribute valuable information and offer productive recommendations to stimulate entrepreneurship and use of the patent system by these underrepresented groups.

Today's hearing is the first of three public hearings that the USPTO is holding throughout the country to obtain public comments in support of the Success Act study. We will also be holding public hearings at our regional offices in Detroit, Michigan on May 16, and in San Jose, California on June 3.

At each of these hearings, we welcome representatives from industry, law, and academia to present oral testimony on the participation of women in the, minorities, and veterans in

entrepreneurship and patent activities. We value your insight and your recommendations regarding concrete ideas and action plans to increase the number of women, minorities, and veterans applying for patents, public policies or other initiatives to promote the participation of such underrepresented groups in the patent system and entrepreneurial activities and the role that the United States patent and trademark office should play in addressing these important matters.

Thank you, so much for your participation here today. And I'm so sorry. I cannot stay to attend your full day of sessions, but I'm sure you will have a very productive and informative day. And thank you again for inviting me here.

SPEAKER: I'm sorry (inaudible) comments. And the director's not here either. I feel like this is the diminishment of the overall importance of this hearing.

MR. TOOLE: Well, we are taking this opportunity here now to hear about the oral

testimony of public -- members of the public. And all of this information, I'm happy to say, will be incorporated -- will be read and incorporated into the materials that we put together in response to the Success Act. And it will be of course including the Deputy Director and the director on all of these activities.

So I want to thank the Deputy Director for being here this morning. And all of the information that we collect today will be incorporated and be part of what we do as an agency together. So again, thank you very much -- I'm really happy to invite -- or happy to have all of you here today. I know that we have a number of people online, not just here in person. And that's going to be true for all of the events that we have with respect to the Success Act. So is not just an opportunity to be here in person, which is a very valuable thing, but it's also an opportunity to see and -- to witness and to understand what people are saying through the webcast.

Now, I would like to spend a couple of minutes, if I may, just to review the parts of the Success Act that are going to be very important for us going forward in our work to respond to the congressional act. So I have a few slides here. Some of this information may actually be -- and I hope some of this information is repetitive to those of you online and some of you in the room, because it will be taken from the Act itself. But it is important that we understand what this says in order to properly respond. So if I may, I have a couple of PowerPoints. All right.

So the first part of what I would like to say is to reiterate some of the points that the Deputy Director made in her opening comments. And that is to review key parts of the Success Act. Now, we know that the Success Act was signed by Pres. Trump on October 31 of 2018. And we have a one-year period in which the study the underrepresentation of women, minorities, and veterans in the pool of patent inventors.

And our work is going -- is involving

several components. In addition to our agency specific work, we're going to be, and we are consulting with the Small Business Administration. But we are also reaching out to other agencies across the US government including the Department of treasury and the department -- and folks over in the Department of Defense, for building out the information on underrepresented groups among patent inventors. Excuse me.

So this language here is the language of the Success Act. And I just want to briefly highlight a few points. So identify publicly available data. So this is publicly available information. This is not information that somebody has as a proprietary resource. We are trying to find out what publicly available information is available. And what do we want it on? We want it on the number of applications annually and the number of patents granted annually for women, minorities, and veterans.

So we are trying to characterize the participation of women, minorities, and veterans

among the pool of patent inventors, which is part of overall invention, but it's not the full picture of innovation, for instance. We would also like to know, what are the benefits associated with increasing the number of patents applied for and granted to women, minorities, and veterans, and also to the companies that they own. So these are all the critical components of what the Success Act is asking of us at the USPTO and our collaborators.

The second part which was mentioned again by our Deputy Director, is to provide recommendations. And here we want to learn about how to promote the participation of women and minorities and veterans in entrepreneurial activities and increase the number of women and minorities and veterans who apply and obtain patents. These are the fundamental components of the Success Act. It's short and to the point, I would say.

Having the Success Act in our hands, what we did is we moved forward with an

implementation plan. The implementation plan includes not only our own work to identify the sources of public information but engage with other agencies across the US government and to have public hearings. And as the Deputy Director mentioned, we have three public hearings across the United States. One on the West Coast, one in the middle part of the country, and one in the eastern part of the country, thereby covering the United States fairly comprehensively.

So these three events that are taking place, these are going to cover the United States, but they are going to allow people the opportunity, as we are here today, for oral testimony. So I would like to point out a couple of things. Today's testimony is going to be recorded and transcribed and included in the official record for these Success Act.

Now if there -- if an individual, perhaps somebody watching online, would like to add comments to the proceedings today or at any of the other locations, they have basically two

options. They can email us at successact@uspto.gov and tell us, I would like to -- I would like to come and present my opinion with respect to the Success Act components. And we would be very happy, and we welcome all of those comments.

We will have, today for instance, a walk-in session after 10:45 this morning. I have to pull out my agenda, but it's after -- yes, after -- at 10:30, we have some scheduled testimony. But then we will have some extra time. So if somebody is watching online right now, for instance, and says, I would like to say something today and I'm not far away, I will go -- you're welcome to come here today and provide some testimony after 10:30 this morning.

Now, in addition to the oral testimony that could be given here today, we will have oral testimony in San Jose California at the Silicon Valley office, and in Detroit, Michigan. Detroit, Michigan will be on May 16 and San Jose, California will be on June 3.

We are welcoming all interest to participate in those events up until about 48 hours in advance, maybe three days. Let's say three business days in advance. Now, the reason we must have three business days in advance of the event is because we had to prepare the agenda and these kinds of things. But we want to give people the opportunity to come to us at the latest possible moment. We want to incorporate people's opinions and give them ample -- as much opportunity as possible.

Our objective is to collect as much information as we can from the public. So if the oral testimonies don't work out, your schedule does not permit, we also allow you to submit written testimony. And written testimony can be submitted all the way through up until June 30. So almost two months from now, so the rest of May and all of June, can be used to prepare written testimony, and we will incorporate that written testimony enthusiastically into our materials.

So I will not take up too much more time

since we are on schedule here. Let me just go over some of the logistics of what we're doing here today and give people a feel for things, because the public hearings are not quite the same as other events. So for instance, at today's events, our objective is to listen. We are not in the position, and we are not having a debate. We are not having a discussion. We are not having a roundtable exchange.

This is a chance for the USPTO to listen uninterrupted and without any kind of questioning, the individual's opinions about women, minorities, and veterans and the aspects that I described to you earlier as I went over the Success Act.

In the federal registry notice, by the way, we included 11 questions that we thought would help stimulate thought and help stimulate people to think about the issues. I was initially going to read those questions to you this morning, but I will hold off on doing that. But I urge you, if you don't remember some of those questions, please go to the federal registry

notice because I think they are very helpful in outlining what we are looking for and what you can contribute if you take a step back and reflect a little bit on what's going on.

So let me just highlight a couple more points before we start, just in terms of procedure. So first of all, I'm the -- we have a clock up here for the timing. When the individual said that they would like to testify, we asked them how long would you like. And they submitted a time to: five minutes, 10 minutes, and so forth.

We are not -- because today, we have a little extra time which is a good thing, we are not going to be super strict with the time that you gave us. So if you said I want 5 minutes and you take 6 minutes, that's okay, but 10 minutes is not, right. And we're going to -- and that's part of my job. I am kind of the enforcer person. I want to try to keep people on time. But I want to have a little bit of a bleeding edge.

So I want people to be able to express themselves. And because we are not constrained by

time today, it seems like a good opportunity to let people have a couple of minutes more if needed. Again, there is no Q&A today. And the order of the speakers will be -- the order of the individuals listed on the agenda. So this morning, we have two sessions. One beginning at 9:20, which is nearly right now. Then we will have a break at 10:15. Then we will have a second session beginning at 10:30.

In the first session we have a number of people; one, two, three, four, five different individuals who will be speaking to us about their opinions on the Success Act and helping us together information. In the second period, the second timeframe, we have three individuals and we might have some of time for some walk-ins. And I hope somebody is stimulated and excited to come down and talk to us. We do have some extra time then at the end.

So without further ado, let me invite up our first person to speak, Mr. Jeff Hardin. Mr. Jeff Hardin is an independent inventor associated

with the Houston Inventors Association and the Inventor Rights Coalition. And please come on up.

And after you, Patricia will come. Oh, you want Patricia -- that's fine. The order is not critical. Patricia Duran is also here. She is an independent inventor. As I understand, she will be giving her testimony in Spanish and Jeff Hardin will be translating that testimony. So we have an extra microphone here to accommodate that. So please let me just get this done here. Okay.

MS. DURAN: Hi. Okay. We're going to have to --

MR. HARDIN: Yeah, that's fine. Okay.

MS. DURAN: Good morning. My name is Patricia Duran. Thank you for the opportunity to allow me to comment with you here today.

I am a woman. I am considered a minority in this country. I appreciate the intent behind the Success Act for Congress to ask for legislative recommendations for how to increase the number of women, minorities, and veterans who apply for and obtain patents. But I must start

with this question. What good is a patent if you cannot feasibly defend it?

Regarding the Success Act, I am certain you will hear this theme from all independent inventors who are the true stakeholders in the patent system and the true source of American innovation. The theme is this; women, minorities, and veterans all reside in the same category with all the other independent inventors, and this class, the independent inventors, this is the true underrepresented class.

And here is why. Women, minorities, and veterans, once they receive a patent, are actually in the same predicament as all independent inventors and small businesses. With the current state of the patent law in the United States, independent inventors and small businesses cannot adequately license the patents they receive with larger financially able entities, the represented class, nor can they enforce their patents against this class when the patents are stolen. This is because this represented class can simply bleed

the underrepresented class dry, legally and financially, by taking advantage of today's current patent laws.

So although pursuing equal opportunity with women, minorities, and veterans in obtaining a patent is a valuable effort, if it does not coincide with equal outcome and one's ability to utilize the patent once received, regardless of the person's financial state, telling women, minorities, and veterans that they stand to benefit from a patent will simply be a false doctrine.

Now that I have provided the above clarification, I will tell you a chapter in the story of my life. I am a cancer survivor. I was diagnosed with breast cancer three months after my daughter was born. I'm almost three years into my fight. After being diagnosed, I received a double mastectomy. And because the biopsy taken prior to my surgery of the suspicious lymph node adjacent to my tumor turned out to be negative, I was able to receive simultaneous reconstructive surgery

during the mastectomy; two birds with one stone. But as it turned out, my diagnosis was incorrect. A second biopsy of my lymph nodes was performed during the surgery and it was revealed that my lymph nodes, in fact, had been compromised.

The result was irreversible torture and I had to re-live this multiple times. During this double surgery attempt, my mastectomy had already been completed, but my plastic surgeon was already midway into his reconstructive procedure using fatty tissue from my abdomen to reconstruct my breasts. Because my lymph nodes were compromised, he had to suspend his work leaving me with a diamond-shaped incision going from hip to hip, and plastic silicone sheets were to remain in my abdomen until I had undergone full chemotherapy and radiation therapy. And then I would have to come back and undergo surgery again to complete the rest of the procedure.

What was the end result and that follow-up procedure one year later? I had complications and my reconstructive surgery failed

three times. I've not only endured and continue to suffer physical pain as a result of the surgeries, but I also endure psychological pain every day when I look in the mirror as a reminder. My scars remind me of the battle I fight, and every day is a gift. My blessing is that I'm alive and I have two beautiful children and a loving husband.

So how does the story relate to patents? Well, given that I endured misdiagnosis, the fact that medical diagnosis methods can be considered patent ineligible is concerning. The cure of my cancer today is merely playing a game of statistics. Crossing my fingers hoping that I will fall within the percentage of people who survive and study patient populations in clinical trials. The chemotherapies I received were a result of a strong patent system but is there something better.

For example, can more work be done in immunotherapy than other discoveries? Or as Sherry Knowles, who is also a breast cancer

survivor has question, or discoveries now being thrown out? The Constitution includes discoveries and so does the patent statute. Jeff will speak more on these, but this is my testimony and I thank you for giving me the opportunity to share my comments with you here today.

MR. HARDIN: Thank you. Thank you, Patricia. And I thank the Patent Office for allowing me to comment here today. I can personally vouch for Ms. Duran and her testimony here. I'm her husband. Her being alive today and our children still having a mother is a testament to a strong patent system. And moving forward, our fear that our current weak patent system will fail us not only medicine, but in artificial intelligence, robotics, computer software, and many other disciplines.

Regarding what Ms. Duran said regarding patent eligibility, I hope to submit for the record along with my written comments, a copy of the paper entitled, Unconstitutional Application of 35USC section 101 by United States Supreme

Court written by Sherry Knowles and Dr. Anthony Prosser published in the John Marshall review of intellectual property law in 2018. This paper speaks on how the court has extraordinarily -- extraordinary judicial activism essentially using white correction fluid on whoever discovers in the patent statute, as well as on the word discoveries in the patent clause of the Constitution.

The Supreme Court's judicial acceptance to patent eligibility have led to quite a bit of confusion as to the patent eligible subject matter. Now with section 101, Director Iancu of this office did provide his revised guidance in January 2019 and say that Congressional redo of section 101, I welcome his guidance. It provides clarity as to what is eligible and consistency among the Patent Office.

Unfortunately, the Federal Circuit expressed in the Cleveland Clinic Foundation v. True Health Diagnostics, they simply are not bound by it. The opinion reads, "while we greatly respect the PTO's expertise in all matters

relating to patentability, including patent eligibility, we are not bound by its guidance." So first, Director Iancu's January guidance has no legal binding. And who is to say that the next director won't change the guidance?

So second, the patent system should not be political. Patent law should not be malleable subject to whomever the current president nominates for the director position, which could easily be persuaded by the donors in his pocket. For these two reasons alone, it is Congress who is the proper entity for addressing 101. Even though the Supreme Court in Alice said to tread lightly let that swallow all of patent law, it doesn't appear the lower courts are heating to that warning and Knowles shows historically that the High Court has similarly written their own exceptions into the law from the bench.

Now I'm aware that the Congress has members at the house and the Senate IP subcommittees currently looking into section 101 today and the Patent Office hopes Congress uses

their framework as a guide. And these members of Congress have indeed published a framework. They published it. They sought stakeholder feedback. And if Congress does continue the path with what they did publish, they will actually be codifying what the courts have written from the bench.

And there was the representation of the people in that law writing. As Knowles explains in her paper, the court, when creating these exceptions did not refer to the statute, but they rather referred to their own previous decisions all the way back. This would be an outrage to our founders, and it would be an outrage to any informed citizen. It is Congress who writes law and we elected them.

Congress has the constitutional power to decide what promotes the useful arts and sciences for the citizenry, not the courts. The court is not an elected body. What Justice Cavanagh wrote in Henry Schein in 2019 was correct. The act contains no holy ground with exception, and we may not engraft our own exceptions onto the statutory

text. He is holding to the text. Simply put, the statute as it was written in 1952 and the historical reasons behind it, should stand as is.

The word any means any. The words, or discovers, means what they say too. But because the courts have shown a propensity to make exceptions, I suggest the following language for 101. It reads; "without exception, whoever invents or discovers any non-natural process, machine, manufacture or composition of matter, or any improvement thereof, may obtain a patent therefor subject to the conditions and requirements of this title. Compliance with this section is not a condition for patentability under section 282."

And I also believe that it's imperative that senators and representatives provide any legislative history that the intent is to expressly repeal myriad (inaudible) and Alice. And I say this here in this venue regarding the Success Act, because of this. The Patent Office published a report in February 2019 entitled,

progress and potential a profile of women inventors on US patents. If you look at page 8 and 0 of this report, you see this; "within chemistry, certain subcategories exhibit even higher women inventor rates; in 2016 for example, women accounted for more than 1/5 of inventors granted patents in biotechnology, 25 percent inventor rate, pharmaceuticals, 23 percent, and organic fine chemistry, 21 percent."

Page 9; "when a patent is granted, a company, university, or other entity is assigned ownership and identified as the assignee of the patent. The female share of patent inventors is trending up across assignee types but universities and hospitals in public research organizations show the largest and most continued improvement."

So given that there are many women in medical history, or in the medical industry, that the Patent Office is to recommend legislation to Congress that may help increase the number of women who apply for and obtain patents, it is my hope that the Patent Office would make the

suggested language for 101 above part of the recommendation to Congress, as this would also help resolve any product of nature or diagnosis method ambiguities currently being judicially excluded. As shown by the testimony of my wife and her misdiagnosis, we need continued innovation in these disciplines.

Now, on to minorities and women. I will quote two of them. First, a woman and a Latina like Patricia here, Supreme Court Justice Soto Mayor. In the oral argument of (inaudible) in February 2019, Justice Sotomayor said this of the post grant review of the proceedings here at the Patent Office. "It does seem like the deck is stacked against a private citizen who is dragged into these proceedings. They've got an executive agency acting as judge with an executive director who can pick the judges, who can substitute the judges, who can re-examine what the judges say, and can change the ruling."

So this, two points. One, Justice Sotomayor did not say it seems like the deck is

stacked against a woman or a minority or a veteran. She said private citizen. And this is the one thing that makes the patent system resemble America. A patent is not based on the color of your skin, your gender, your race, or otherwise. A patent is based solely on the merits of the claimed invention and nothing more.

And two, this reinforces what Patricia has already stated here. When it comes to patent challenges within the system, Congress created with the American Invents Act in 2011, Congress unintentionally created an unrepresented class, the independent inventor and small business. And this brings me to my second minority woman of whom I will quote, House representative Sheila Jackson Lee of Texas. Let's set the stage, shall we. June 23, 2011, the American Invents Act is being disclosed and discussed on the floor.

Congresswoman Jackson Lee rises to offer an amendment and she says, "my amendment speaks to the vast population of startups and small businesses that are impacted by this legislation.

Small business makes up a large portion of our employer network. It is important to understand how they would be impacted as a result of patent reform." This is 2011, American Invents Act. She is on the floor talking.

This (inaudible) of Congress, her amendment will put us on notice that we need to be careful that we allow at least the opportunity of investment and investors and that we continue to look at this bill to ensure that it responds to that opportunity. My amendment also reinforces that we do not wish to engage in any undue taking of property because we indicate that we want to see the innovativeness of American businesses continue.

And this one is key. Small businesses it should be as comfortable going to the Patent Office as our large businesses. Then she provides her (inaudible) per amendment. And she says we must always be mindful of the importance of ensuring that small companies have the same opportunities to innovate and have their

inventions patented and that the laws will continue to protect their valuable intellectual property.

Without strong protection of patents, businesses will lack the incentive to attract customers and contribute to economic growth. So what happens to that investment that Ms. Jackson Lee mentioned? Well, according to the alliance for the United States startups and inventors for jobs, the USIJ, and the strategic sectors of core internetworking, wireless communications, Internet software, operating system software, semiconductors, pharmaceuticals, drug discovery, surgical devices, and medical supplies, venture capital funding has dropped from being 20.95 percent of the total VC funding in 2004, to a mere 3.22 percent in 2017.

The VC money is gone. I hope to include this report from the USIJ along with my written comments here. Just like representative Jackson Lee warned with her sense of Congress amendment, Congress was put on notice that they need to be

careful to allow opportunity for investors and Congress must continue to look at this bill to ensure that it responds to that opportunity.

Given the evidence, showing investors fleeing these sectors, now is the time to look at that bill and its consequences. Not to lawyers, not to big business, but to the true stakeholders, the American inventors. Where are they in the conversation? And are they being left out?

Interestingly, Congressman Smith as seen in the Lee Smith Inventors Act, American Invents Act Congressional record, responded to Congresswoman Jackson Lee and he said this. Immediately after she sat down, he stood up and said, "I want to make it clear that my interpretation of this and its intent is to highlight the problem posed by entities that pose as financial or technological businesses, but whose sole purpose is not to create, but to sue. I am talking about patent trolls. Those entities that vacuum up patents by the hundreds or thousands whose only innovations occurred in the

courtroom."

And yet even more interestingly, it was just last October in 2018 when the director of this office, Director Iancu, called the patent troll narrative Orwellian doublespeak with mentions that the patent troll narrative being synonymous with a fairytale throughout. He did that in Texas. Others in the industry have even come voicing that this is just a ploy by big tech to weaken the patent system. Director Iancu said in his speech, "In our zeal to eliminate quote, trolls and the quote, bad patents, we have overcorrected and risk throwing out the baby with the bathwater. This must now end, and we must restore balance to our system."

So where is this imbalance amongst these two groups? The underrepresented and the representative? What can you not get from a PT post grant review proceeding that you can get from the traditional article 3 court? If we ignore now having no stacked panel and a partial judge on a jury, full discovery, and presumption of validity

that you do get in an article 3 court, I will summarize it in one word; representation.

Per the 2017 AIPL report of the economic survey, the estimated mean cost of a post grant review proceeding through appeal was at $450,000. This is how much it costs a patent holder for a single post grant review proceeding. There are still problems with, what the real parties of interests. What about game tackling and serial attacks, et cetera? Before a single post grant review, a patent holder, the independent inventor will need just shy of a half-million dollars.

And with stats showing the kill rate for patents at the PTAB between 75 to 85 percent, no attorney is going to take this on contingency especially when there are no damages on mere success at the Patent Office. This cost is on the inventor's dime. And this is just the reach the same state of reliance that previously existed on the day patent was granted before the America Invents Act went into effect.

In other words, if you don't have a

half-million dollars to spare for a single patent challenge at the Patent Office, you will not find representation if you ever want to license your patent or someone does the math and challenges you or if you want to protect your patent when someone else deals your invention.

Is this a fair shake? Does the patent give women, minorities, and veterans any real benefit, or all independent inventors or small businesses, for that matter? With advances like this, the question that arises if you were to encourage these groups, women, minorities, and veterans get more patents, it's not what we doing for them, but what are we getting them into because they have no idea.

So what is the legislative recommendation that the Success Act is looking for from this office and from stakeholders? How do we create equal outcomes of the equal opportunity even presents in a sense that's worth pursuing? That recommendation is this. The Patent Office must recommend to a Congress that if Congress was

to keep their American Invents Act system that created the represented and underrepresented classes, Congress must recognize the underrepresented class in the statute.

And doing this is simple. Recognize patents with the inventors or small business owned solely by the inventors retain ownership of the patent. These are not the so-called patent trolls. These are the true American innovators trying to start a company in their garage. They're the ones who own their patents. They retain ownership of it. Establish and identify them, inventors who own their patents, in the statute. This is the true underrepresented class. Give them preference when it comes to the patents being challenged.

If it's more economic and economical and faster to go to the PTAB then they will go. If not, then they will stay in the traditional article 3 court. Give them proper venue, 1400 B, and places where they performed the research, for example. The face of the patent says that the

patent holder has the right to exclude others. They should have that right when it comes to injunctions.

Once Congress does this, the playing field will be more level. Independent inventors and small businesses and all women, minorities, and veterans who reside there in those categories, they will all have a more equal outcome. And that baby that has been thrown out with the bathwater, as Iancu mentioned, will have been safely taken out of the bathtub before the bathwater has been tossed and the patent bargain will be worth pursuing again for the underrepresented group to which you wish to promote. Thank you.

MR. TOOLE: Thank you. Thank you very much, Jeff. Thank you, Patricia, very much for your testimony today. Okay. So we now have Brian Aumiller.

MR. AUMILLER: (Inaudible).

MR. TOOLE: Yes, that's true. Also an independent inventor. And he has requested about six minutes or so.

MR. AUMILLER: Attendees, thanks for coming. Mr. Hardin, he said a lot of stuff that I'm going to say. I think it's very fitting for us to get this out. Thank you for your time.

My name is Brian Aumiller. I served about 11 years in the National Guard. I served multiple deployments from 2001 and got out in 2008. I deployed to Germany. I was activated to do basic security at Fort Riley, Kansas and I volunteered on an Iraq deployment that would turn in to become the longest military deployment of OIF.

I didn't grow up with a lot of fancy toys or fancy vacation experiences. I got a push mower. My father believed in a hard-working keeping busy and there's always work, to be done. This later probably to joining the military after high school. My parents couldn't pay for my college, so I joined the military.

After my Iraq deployment Congress passed the post- 9/11 G.I. Bill leading into the summer of 08. My civilian job cut my hours and I made

the decision to go back to school. I found and I applied for and got accepted into a watchmaking program in Oklahoma. After two years of school, I graduated in 2013.

My wife and I moved to Florida for a job. It was my first start as a civilian professional. Fast-forward five years, I come up with an idea and I have no clue what to do. I found it hard to find help or even talk about it with someone because of patents. Because the last thing you want is someone stealing your idea. The VA didn't have any resources, but they did recommend the SBA. They help vets, I was told.

The SBA didn't really help that much before I was even able to ask about patents because they wanted a business plan. I didn't have one let alone have an idea how to do one. So moving forward, I unknowingly did what every inventor does. I went out, get a lawyer, and start my patent for my new idea. I did the track one option and it was issued within seven months. It felt great. It's an unexplainable feeling

getting that letter from the USPTO. I was excited because now I have something that is mine.

I paid for and the government gives me control of it. Is mine. I think to myself; this is what it feels like to live in America and to go through the process of getting ahead. I can play by all the rules set in front of me and have this feeling, this is what I fought for in the military and this is why I served; for the American dream. This is becoming mine and it has changed.

My patent was issued, and I have yet to discuss it publicly, even to the majority of my family. In front of you is my first time doing so. I don't know what success my product brings, but I would like to know there is a level playing field for me as an individual inventor.

After getting my patent issued and going through the process, right away the patent is only valuable if you can defend it. When I got back from Iraq, there were home improvement shows that would go in, fix up the house for that, in turn over to usually a disabled vet. And then I heard

a story about how the veteran had lost his house because he couldn't keep up with the maintenance or the tax assessed on the property. And it just made me think, why would anyone have thought of this.

And I feel like that's why we are here. Helping us get a patent is a good start but helping us enforce it or make is easier on the business owner to protect is the easy part. Again, getting the patent is the easy part. Protecting is the hard part. It could cost tens to hundreds of thousands of dollars and years to complete.

I read stories on products on Kickstarter of being knocked off in China and being sold and delivered to the US before the Kickstarter project has even finished regardless of if they had IP or not. If that don't kill the business, I don't know what will.

I feel the larger companies don't want to visit and they label us patent trolls to defending our patents. And we -- and the use the

courts to take advantage of us knowing full well that we can't do anything to beat them. I would also like to add that I think the USPTO can work with the SBA on helping -- getting that educating on us for us unrepresented, on helping us to defend our patents.

I also feel that needs to be more accountability with those companies that do prey on people as well. I would also like to add that securing a patent helps with getting money and investment. I will keep moving forward and I can with this process. And I will keep hoping changes will be coming from Congress. And on a side note, I don't have $400,000. That's it.

MR. TOOLE: Thank you very much. Appreciate that. All right we have -- it's Paula Murgia. Okay. Would it be okay for you to wait until the next -- after our break? Okay? Very good.

So our next speaker is Darcy Bisker. She is also an independent inventor and she has requested 15 minutes to speak to us this morning.

Please step up.

MS. BISKER: My name is Darcy Bisker. I am an artist, an entrepreneur, and a patentee. I need to take a couple of minutes after Brian's moving testimony, and Paula and Jeff's as well, with such great information and forethought.

I would like to take a few minutes just to -- actually three minutes to tell you my life story and how it ended in an inability to protect my patent. I was born in Ohio. My father was a genius, uneducated. He worked at International Harvester and created many amazing inventions that were primarily design improvements. He made his own flying Gyrocopter, two all-terrain vehicles, a snow mobile, a water wheel, a solar panel. And we built log cabins in the wilderness in Canada.

During that time, I learned the value of understanding process improvement and how to take an idea into a project and make it happen. I went to public school. I went to a public university, Ohio University, where I graduated summa cum laude with a bachelor of fine arts in photography. I

emphasize this because we have a very nice afternoon here related to success in engineering and sciences however, the general arts and the general population needs to be informed about happens.

People are afraid to even use the word. I think you experienced that, Brian. When a person does invent or create, to not even understand the basic concepts -- and they were not taught to us in high school. I recently formed a company called Invent Yourself. My idea was to help inform kids in high school when their neural plasticity is that the greatest, what patents and trademarks mean, how they will be a part of it. It can be done in 45 minutes.

I made three presentations, discussed the history, importance, and showed some funny patents; beer keg on the head. Kids love it. And then they understand the basic concepts and how this is a civil right, that this is something that all citizens can participate in.

However, after graduating college, I

went out West to Colorado, joined a very nice company for $5.00 an hour, which was the minimum wage at that time. As a woman, I was underprivileged. At that time, there were 12 -- this is 1982. There was 12 percent unemployment. I, with a degree, I started as a receptionist at a photo lab.

I then switched companies, brought in the first million dollars in sales, and said, we can take this and become a national entity. We can do it by love and passion for our work. While in that company, we grew to about 40 people. We started taking -- having national accounts just as I had envisioned. And then created several products.

One of them I thought was quite interesting. Wow, this is something so obvious and it has not been done before. Does that mean it's nonobvious? Is it useful? Oh, it really seems to be useful. I started doing tests in house and then publicly. When I realized that, at my first public tradeshow, there were 700 people

surrounding my booth with people like the gap in the back saying, will you call us. I had really hit on something.

So immediately within the time constraints, began talking to a patent attorney, spent the time and money through a four-year prosecution and retained every word of 26 claims. Now this is relevant because during that time, my patent was very widely accepted and utilized, produced, sold, manufactured and made by everyone.

Now you might say, well, was the patent valid? Well, it was issued valid. There was no prior art. There were no invalidating publications. And what happened was it was such a successful project -- like Brian, you mentioned what happens on eBay. When something is successful, big companies come in.

At this point, and of course I had made millions on the product too. It was by this time, 1999, my patent 5,000,008632. So that shows you in the last 20 years we've gone from that number to 10 million. So the slope was low. It's gone

high. We all know that. By the time my patent was issued, only 2 percent of patents had ever been issued to women.

Because I was also owner of the company by this time, or part owner I should say, I obtained full -- I did not assign my patent to another company. So I am the inventor and owner of my patent. Because infringement was so great, News Corp. -- the business was in that -- I'm sorry. I don't even know the numbers anymore; hundreds of millions. I -- we decided to sell the company. We made seven times earnings because we were a very good, solid, profitable company employing 87 people and 37,000 square feet of manufacturing in Denver Colorado.

The company was (inaudible) and Visual. Once we sold the company, my business partner of, at that time, 20 years, decided that we needed to start -- that it was incumbent, as we were told, by the patentee to take on lawsuits. And Jeff, the figure that you -- I'm sorry -- Brian, the figure that you used of 400,000, is just the

beginning. You have to sue and sue.

I decided it was wise to take on the largest infringers first. I did pass reexam, a forced reexam, completely. And at the same time, I was ruled a -- I'm sorry. There was a summary judgment of noninfringement by a judge in Texas, a magistrate. The appeals court chose not to overcome that ruling.

So while there was nothing in this field and then suddenly a multi-hundred billion dollar -- million dollar industry that is now in the billions, sold by News Corp., sold by 3M, sold by Hewlett Packard, infringing products all around. I lost the money that I put in, that I could've been generating more business.

But because the patent was not respected by commercial businesses, by the large corporations, and not by the court, I have to question, is United States Patent and Trademark Office issuing valid patents. And if so, why are they not being upheld in the judiciary?

Now, to address this meeting. I'm

sorry. I know I probably started off on the wrong foot with the undersecretary. I think that when a department or a government of the people, for the people, and by the people chooses to determine and spend taxpayer dollars on further studies in how to make improvements and they say that this is an important issue that women, and minorities, and veterans are underrepresented, then I expect more than a week's notice in the public register. Yes, this hearing was notified last September when the report was issued.

And then it was published late in the public -- in the Federal Register for request to hear to be at this hearing, only -- with only a week's notice. I'm sorry. I didn't say that quite right. I will correct it in the written record, which I know of course we have until June. And I also understand that this testimony as well as others will be read at some point by the, hopefully, by Director Iancu and hopefully by the Deputy Director Peters.

I am very disappointed that neither are

here today. I'm very disappointed that there are only a few of us. And it seems it's the individual -- the independent inventors who are best represented here, trying to plea. As Patricia so well put it, and thank you Patricia, yes, we are part of the underrepresented class. As a woman, as a minority, and as a veteran we are part of the true underrepresented class of independent inventors.

Now, as I mentioned, I started a company in January called InventYourself.org. I have out -- it was about educating 15 to 25-year-olds on the patent system. I don't think I'm going to continue with that. I don't believe that I should help lead a sheep to slaughter. There is, at this time there are -- there is no action toward understanding the PTAB issues.

The point that you made Jeff, are so interesting and well taken. In the need to be a reform. We don't need to continue to focus on what we already know. Women are disadvantaged. If I have five fingers and I take one, it's the

thumb that I've taken that is a disadvantage of 20 percent. So once I have only four fingers to work toward innovation, how will I use them. Well, it probably isn't going to be to take the money that you earn, the jobs you create and put it in the public (inaudible) openness; and have it usurped and taken away from you. Instead I expect more closing of that. We've already seen the statistics.

There were two questions that you asked Mr. Ross. For they are of primary interest in the success act study. Again, I challenge -- I know that it is necessary for us to study, but something the Department of Commerce knows how to accumulate information without making it personally identifiable and so therefore overcoming the perception of bias. That is known. Do it.

Secondly, there are approximately 5 million inventors alive. Let's survey them. Again, (inaudible) is open. My home address is published. Okay. Now we don't want to associate,

obviously, what class a person is in with a patent process. But once a patent is issued what's the difference? There is no privacy anyway. And, of course, that address was acted on. It's public information. Lots about the publication of a patent, that causes an inventor to be acted upon by sharks, trolls, and by infringers.

I think also, not only should there be a survey of existing live inventors, ask about their story. Get their story down, understand it. Women are underrepresented in patenting and engineering and sciences because while we may be equal, or even better at those arts, we are also quite good at the other arts, the material arts. And the idea that women do not know that they can -- well, again, I keep stopping myself because I don't want to encourage women to get patents. This is a heartfelt issue for me right now.

And by the way, when we lost our summary judgment of noninfringement; that was on Tuesday afternoon at 4:00 that I was given notice by our attorneys, and the next morning my business

partner, Ed Sykes, we had worked together for 28 years; he had a heart attack. He had a stroke while he was being operated on and died soon later.

So these issues, while they may seem tangential, they may not seem all that important, they are very important issues. They are how the country was developed and the potential is enormous.

And one of the questions I thought was interesting, that I kept stumbling over, was what is the benefit? Well, we already know that the potential for commercial benefit -- the potential is for the commercial benefit to quadruple. So what does it benefit? The benefit is self-evident, equality is self-evident. The benefit of the quality is self-evident. It asks how to --

I'm sorry, I also wanted to mention another thing about the survey and how they gather data. Obviously, you could do -- we've got a 2020 year coming up here, start a 10 year initiative at

state, as for anybody who applies for a patent to be part of a survey. You know, certainly, if there's going to be 10 million patents filed in the next in 10 million years - I'm sorry, in the next 10 years, which will probably be decreasing, and since it's a decreasing, I'm not sure what those numbers would be. I was looking at the chart. Even a small portion of those participating and willing to have a tracking of their life, and results going forward, would be helpful because PTAB and the post-grant process are too expensive. They are inhibitory, and they are preventing all individual inventors as well as women, minorities, and veterans.

I'm just going to check to see if there's anything else. Oh, I did want to mention that -- actually, I'll leave it at that. Thank you for your time.

I'm sorry I do -- I would like to go on the record to say that the United States Patent And Trademark Office is one of the most efficiently run professional and excellent

organizations that I, as a citizen, have ever dealt with. That does not mean that there aren't problems. This hearing should have had greater notice. There should be more than three public hearings. There are 150 million women in the country. Okay. There are three locations at which this hearing will be made. And the information will be in the same circles, it always is, the attorneys and the inventors and the USPTO people. Let's do some public information. Let's get some -- pay as much attention to this as we did to other campaigns for important public notice.

Thank you.

MR. TOOLE: Thank you very much, Dorsey. I agree completely. In fact we want to spread the word as widely as we can. We use the social media as an outlet to spread the word for the oral testimony opportunities, and the written testimony opportunities. And I hope that that's been a little bit more effective in reaching outside the traditional circles. I know some folks who are

not directly involved in patents do follow the PTO in the social media. So we have use that.

Now, it's time for us to take a 15 minute break, and then we will return here at 10:30 to finish the rest of the testimonies from our individuals. So we will see you here in 15 minutes, please.

(Recess)

MR. TOOLE: All right, let's take our seats, please. So we've had a very successful morning so far. We've heard some very compelling oral testimony. I just want to mention that Drew Hirschfield, our Commissioner for patents has been in the room this morning listening, as well as Bismarck Myrick who is the director of the office of equal employment opportunity and diversity are also here. He's also here. So just to recognize these individuals.

Now, without further ado we have the next testimony by Paula Murgia, she has kindly waited until after the break to give her testimony and she says for 10 minutes to talk. So please

come on up.

MS. MURGIA: Thank you. Hi, I'm Paula. And this is what I've learned how to say since February. Hi, my name is Paula, and I'm a debtor. I recently joined Debtors Anonymous. I didn't even know it existed, but I've been put into that situation. I'm sorry. I am going to break down, so get ready everyone; as I have periods of the emotional outburst.

I didn't even know that Debtors Anonymous existed until I tried to pick my life back up after October. That's when I was invalidated in the US court, in the Southern District of New York. So to call myself down I'm going to read some things. I put some things together so I could be a little coherent, and put actual words, not just emotions on the record.

One of the thought leaders who I follow in law, I guess, a policy advocate is Tim Wu, professor Tim Wu. He teaches at Columbia Law school; he is an author of this book, the master switch. He also wrote The Attention Merchants and

the Curse of Bigness. Professor Wu settles my nerves because he has a better way with words, so I will read a short review of this book before I read an excerpt from this book of which I requested his permission this morning in an email and he hasn't yet responded so I don't know if I'm breaking copyright laws, but I hope he doesn't mind.

In 2010 the review for this book. "In his new book, The Master Switch, Mr. Wu defines and explains what he calls the cycle. The cycle basically describes the typical evolution of an information technology from the domain of hobbyists, think Alexander Graham Bell in his attic in Boston, and Steve Jobs and Steve Wozniak Los Altos garage.

"Two large monopolistic institutions such as AT&T and pre-cable network TV, the general pattern of disruptive technology spawns a fledgling industry which is largely open and accessible to many players. Slowly, it evolves into a closed industry controlled by one, or a few

big corporations. Those in control tend to fight innovation because it threatens their own power base and source of profits. This state of control prevails until another disruptive technology succeeds in upstaging the dominant one."

I went to see Professor Wu speak at a book signing for The Curse of Bigness on April 9. And I couldn't rate for the Q&A and I raise my hand and asked him, I was like, but don't small inventors deter monopolies when they have the right to ask for a license? And his reply was that I needed to check out what he wrote in The Master Switch about Bell patents. And he does support small inventors in this piece.

In antiquity, Cronus, the second ruler of the universe, according to Greek mythology had a problem. The Delphic Oracle having warned him that one of his children would dethrone him, he was more than troubled to hear his wife was pregnant. He waited for her to give birth then took the child and ate it. His wife got pregnant again and again, so he had to eat his own morak

more than once, and so derives the Cronus effect. The efforts undertaken by a dominant company to consume its potential successors in their infancy.

Understanding this effect is critical to understanding the cycle. And for that matter, the history of information technology. It may sometimes seems that intervention and technology advances are a neutral, are a natural orderly process. That this is an illusion. Whatever technology reality we live with is the result of tooth and claw industrial combat. And the battles are more decisive than those in which the dominant power attempts to co-opt the technologies that could destroy it; Goliath attempting to seize the slingshot.

I'm going to talk about Bell patents. 1878. For months Bell suffered under the onslaught of Western Union. As if warning his company Alexander Bell became a bed written invalid in the grip of such a depression that he checked himself in to the Massachusetts General Hospital. The struggle between Bell and Western

Union over the fate of the telephone was, in retrospect, a match to the death. The victor would go on to prosper while the loser would wilt away and die. This is how the cycle turns.

Bell was overmatched in every area; finances, resources, technology, except one, the law, where it held its own, it's a one all-important patent and so as the firm's eponymous founder late in the hospital Hubbard, Hubbard was his business partner, an experienced patent attorney himself, retains a team of legal talent to lots of bells only realistic chance of survival. A hard-hitting lawsuit for patent infringement. The papers were filed in September 1878. If Western Union was a figurative Goliath, the lawsuit was David's one slingshot stone.

The importance of Bell's lawsuits shows the central role that patent plays in the cycle, and it is a role somewhat different than is usually understood by legal scholars. Patents are, by tradition, justified as rewards for invention. Owning a patent on the lightbulb, or a

cure for baldness means that you, or your licensee can profit from its sale. The attendant games are meant to encourage investment in intervention.

But in the hands of an outside inventor, a patent serves a different function. A sort of corporate shield that can prevent a large industrial power from killing you off or seizing control of your company and the industry."

Thank you, Tim Wu. Now I'll give you a personal story because I'm delighted to be here, I have to let you know, even though it's emotionally traumatic because I really think that by getting stories, personal stories it hits home. Tim Wu settles me, but it also sort of lays the foundation for my story, and I feel like the story of all inventors here.

Okay. Starting with my background, I worked as a young woman in my early 20s with at risk children as a behavior modification milieu therapist at Emma Pendleton Bradley Children's Psychiatric Hospital in Providence, Rhode Island. This experience and these children motivated me to

dedicate my life to the pursuit of manifesting ideas so as to further benefit at risk children in crisis.

So in the early 80s, I'm sure you all kind of remember the nascent videogame industry at the time that basically was just like Atari; simple Atari systems, Pong, those type of very simple games, but as a milieu therapist working with deeply disturbed children and trying to have a behavior modification program for them, I leveraged anything I could. And the video games, the children would do anything, anything just to have video game time.

Having those ideas, connecting those dots was really inspirational. I was like, oh my god, if we can only get these video game systems somehow into these behavior plans, you know, these kids will do anything. And full eight-hour days with children who are suffering is very tiring and you lose your motivation quickly and you really seek tools to help them. So that started my journey and led me to earning advanced degrees at

renounce and very, very expensive institutions of higher learning.

I didn't know what to do. Like you say, you have these ideas, you have no idea how -- what -- my grandmother would say to me, isn't it always strange when you want to fix a product or do something to it it's always, they? Who are they that made this product? And she inspired me. She was a very clever woman. She only had a third-grade education, but I wanted to become one of the "they".

I was undiagnosed as a dyslexic, so I had very difficult times in the regular schooling and I didn't now what to do with these ideas. So I was 30 years old at the time, so it was 10 years with the children and I just though I'd risk it all. And I said what would you do if you had a million dollars? What would you do? And I was like, oh my god, I would go to the prestigious Rhode Island School of Design that was so much a part of the neighborhood in Providence, Rhode Island.

And I was accepted. It was the beginning of technology. I was an older student in my 30s, an undergraduate taking classes with rather privileged younger people who I kind of gathered around in a computer lab. Started some of the first technology and art groups at Rhode Island School of Design. The technology at the time was so simple -- it was the 90s by then, early 90s and it was just like Mosaic was your browser.

So I went through my core studies and became very inspired to get a masters degree, and came to NYU where they had the interactive telecommunications program, which at that time was second only to MIT media lab. And that was it. Those were the two technology programs where you could get an advanced degree. So I kept betting and getting those loans and getting further and further in debt. But I was banking on my creativity to be able to pay those back. I really wanted my ideas to generate some sort of the income that would pay for this American system of

education.

So, my ideas were cohesive with another group of students who all had medical backgrounds too. And so we were able to do a thesis for our graduate thesis which we patented ourselves, and that was the beginning of getting a patent. But I really have to thank those children that I worked with for really giving me the hutzpah to even think I could do such a thing.

So the path to manifesting ideas requires great commitment of time, money, courage, perseverance, and an absurd level of optimism and suspended belief that if you bootstrap and invest all of your savings, energy and grit to build any type of proof of concept of whatever it is that you invented, that industry, and for me it was the technology industry, at large would applaud and welcome you. So this was the super naïveté thinking and that I had done something really good. I mean I was happy I did it, and I thought other people would sort of be happy about the fact that I did it.

This, however, was not the reaction I received. As by the time I was granted my software patent in 2004 big Tech was well on its way to demonizing patent holders and by association inventors. Accusing us of impeding innovation, when in reality, we were just in the way of them steamrolling their own way towards monopoly status. They labeled all software patent holders as patent trolls, and I personally experience of being shunned, scolded, and lectured whenever I mentioned being a patented inventor in the digital technology industry.

I would go pitch, and pitch, and pitch. I would do everything that was by the book. I had people laugh at me. Oh, you think a cartoon character is going to encourage someone to stay healthy? Get out of here. Yeah, and by 2005 Nintendo had launched Wii fit. I had a former senior executive from Activision just blatantly tell me you are the problem. You are not the solution. My self-esteem has really taken a lot of blows. Venture capitalists were not

encouraging either give them the Goliath size of the competitors, soon to be infringers, like Nike, Fitbit, Apple, Samsung with whom we were in the same market space as.

Like many software patents, post-2014 my first attempt to enforce my rights as a patent holder was defeated this past October in New York Southern District Federal Court. US 6769915 was invalidated under Section 101. We filed our appeal last week, so I guess I'll be coming back to Washington in a few months and I don't know. You can't take it out of me. I am still holding on to some sort of hope that something could happen.

I mean I'm happy to testify here today. It's to help you collect any information that could be valuable for you that could help other people not go through what we're going through. Encourage more women, minorities and veterans to invent here in the U.S. rather than in China as seems to be the current trend due to the switch in the patent laws.

So it's my continued optimism that my own dreams to appeal my status as being invalidated and to have that be realized, crazy as it may seem, and I'm really motivated just to be with this group of inventors and to meet you all personally to share these stories, because I'm kind of like a people person. So that's why I'm here.

Thank you.

MR. TOOLE: Thank you very much, Paula. That was also very personal. I'm struck by how personal how all the stories are today, but please share as you want.

I think we don't have a couple of people who were on the list. Dan Sullivan. Is Dan Sullivan in the room? Steven Key? Right. Okay. So these two folks who had signed up are not here. Of course there's still an opportunity to testify orally at one of the other venues or to submit a written testimony. So the opportunities are not lost.

But we have an additional speaker today.

Dr. Leslie Flynn from the University of Iowa. And if you would like to come up here, we're ready for you.

Thank you.

DR. FLYNN: First of all I want to thank all of the speakers who went before me for their testimony, and it really will impact the work that I do moving forward. I also want to thank you, USPTO for this opportunity to share information about the participation of women and other unrepresented groups in the innovation, innovation, and entrepreneurship ecosystem in the United States.

As Andrew said, I'm Leslie Flynn. I'm a professor of innovation and entrepreneurship at the University of Iowa. I'm housed in the Jacobson Institute for Youth Innovation and Entrepreneurship which is part of our Papa John entrepreneurial center. Our work focuses on positioning youth and young adults with the skills, mindset and knowledge to persist to be the next generation of inventors in the United States.

I see my work in this area as not really a job, but a life-long passion; one that many of my colleagues and you across the nation have shared and one I am pleased to know the United States Patent Office is advancing through these hearings.

I'm a first generation college graduate in my family to hold degrees in science and I'm also a small business owner. This has afforded me great opportunities to pursue a happy life, serve my community and secure economic vitality. Many women and other underrepresented populations do not have access to the same experiences I did as a daughter of a business owner.

It is a national imperative that all young adults be provided an education that invites them to the innovation table. In order for the United States to progress as a nation we need a larger pool of citizens engaged in technological advances to fill high-skill jobs. We need to begin our work- force development before students leave our K-12 education system. Students in

middle school and high school are already making decisions about their ability and interest to pursue degrees in STEM and their position in our U.S. work force.

As evidenced by recent STEM work force and patent data, Undersecretary Peter highlighted this morning, women and other groups are not pursuing opportunities in comparison to their male, white counterparts. The current educational system does not distribute opportunities equally to all K-12 students and by extension to all U.S. citizens.

Our team took up the challenge to research how students from all backgrounds can gain access, ability, confidence and interest to pursue innovation and the entrepreneurial spirit as a post-secondary and career option. In 2013, in collaboration with over 50 industry experts we created STEM Innovator, a platform to engage middle and high school student teams in designing solutions to complex problems while working with business and industry partners.

Students engage in a start-up methodology which takes them from idea generation to possible commercialization. Students engage in authentic practices of innovation including rapid proto-typing, data driven decision making, agile and lean methodologies, collaborative teaming, utilization of digital platforms for research and development. Design thinking and pitches to the community for feedback on the value of their solution to solve problems they are tackling.

Students gain access and exposure to many careers they didn't know exist through multiple interactions with industry experts. Through the experience students demonstrate a variety of skills, mindsets and knowledge we seek in post- secondary students and a highly-skilled workforce. We seek to transform the student experience from sit and get to generate and crate. Our current education system does not engage all students in these experiences and therefore is not preparing them for our future.

To provide evidence of our educational

system -- that our educational system needs a radical pivot we have engaged in a robust research agenda to study the impact of students engaging in the STEM innovation and entrepreneurial process. In 2016 we engaged in a three-year longitudinal study to collect data on high-school students from across the United States engaged in the STEM innovator platform. To date, over 2,000 students have submitted an innovation portfolio, data, which is bench versus industry standards. The digital portfolio collects data from multiple sources across the student's educational experience, allowing growth to be captured over years. The final data capture will be complete this June. Because the STEM innovator platform is infused in the student's normal school day and mostly in required classes, all demographic data matches those of the communities we study. Our population identifies as 48 percent female and 49 percent male. Thirty percent of participants identify as non-white. Geographically we have an equal number of participants drawn from rural,

urban and suburban areas.

Our team, working with other research one universities will release full results this November at the Lemelson Foundation Invention Convening held in Washington, D.C. Closely following this public disclosure, detailed findings will be available in research journals.

Here are a few of our key findings. Today I will present sample findings from our research, and provide specific, concrete action items the administration can take to facilitate women and underrepresented groups' engagement in the innovation and entrepreneurial ecosystem. Our longitudinal study is conducted with young adults age 15 to 18 to measure the impact on their workforce and college readiness skills, mindsets, and the knowledge as they collaborate on teams with industry mentors to advance a prototype solution to a challenging real-world STEM problem. This information is important as young adults are making decisions now about their ability, interests, and future work first choices. These

decisions will impact their future economic vitality and the nation's ability to include a more diverse pool of future innovators and entrepreneurs needed to solve our most pressing national issues.

Finding one; we know the list of skills, mindsets, and knowledge needed to engage in the innovation and entrepreneurial process. These were identified by industry leaders and benchmark versus additional national research and federal workforce documents. Examples of these mindsets and skills include risk-taking, adaptability, resilience, initiative empathy collaboration, creativity, critical thinking, data driven decision making, science and engineering practices and digital fluency.

Finding two; our stem innovator digital platform allows students to identify and reflect on how, and why these attributes are changing over time as a result of engagement in the innovation process. We call this and their innovator profile.

Initial data was collected on 760 high school students, a minimum of three times across the school year. Results indicated all high school students significantly increase their innovation and entrepreneurial skills and mindsets. Students provide evidence of what experiences influence to their growth. For example, Emily from an East Coast public school states, "I know I don't have to be a perfectionist. Failing is important and critical. That is what my industry partner taught me, and I believe him."

Finding three; when the data is disaggregated by gender, we see significant growth at the same rate as male counterparts between females and males. There is no difference between males and females. This data provides evidence that young adult women are as capable as male peers to attain and demonstrate competencies in innovation and entrepreneurial skills and mindsets.

Finding four; when the data is

disaggregated by race, students of white, non-Hispanic or Latino background and all other underrepresented groups all significantly increase the skills and mindsets and do so at the same rate. Again, our white non-Hispanic Latino students and all other races can equally engage in the innovation process and demonstrate these skills.

Action items; young adults, especially women and underrepresented groups, need to be able to engage in the innovation and entrepreneurial process while still in our K-12 education system so they persist and identify as inventors. There tends to be a systemic cultural change or shift in our public schools to give our students opportunities to gain these skills. This should be advanced through legislation, K-

Research and development funds and a serious call to action for private and public partnerships where business and industry partners both financially and through mentorship engage in the K-12 arena.

An additional fighting is that we collected data on the teachers of the same students. To do this, teachers -- to understand how teachers would engage in this type of activity teachers engage in 100 hours of STEM innovator professional development. Educators took the same innovator profile as their students, but they were also asked about their ability and capacity to teach these skills and mindsets to their students. Teachers identified that although they may feel they have some of the skills and attributes like resilience, they have no idea how to facilitate these into their practice and translate these to their students.

They also initially indicate that they have no capacity to lead teams in bringing an idea to sustainability and how to work with industry partners. For this action item, in-service teachers need to be provided access to research driven professional development to catalyze innovation schools. Once the innovation and entrepreneurial process is present in K-12 schools

more women and underrepresented groups will have a need to file US patents because they will identify as innovators.

We are excited to work on advancing this with the United States Patent Office and with our research partners across the United States and we look forward to sharing our results with you in the fall.

Thank you.

MR. TOOLE: Wonderful. Thank you very much. Really appreciate hearing about that program. So now, we've reached the end of our scheduled testimony and there is opportunity at the moment for unscheduled testimony. However, if my eyes don't deceive me, we do not have any new folks in the room for unscheduled testimony. Is that true? Can I see if there's anyone who would like to speak as an unscheduled individual?

SPEAKER: (off mic)

MR. TOOLE: Would you like a few more minutes? Okay. We have time. So coming back up to share a few more faults is Darcy Bisker,

independent inventor.

MS. BISKER: Thank you. After hearing the emotional testimony by the independent inventors represented here, I have to ask a question. Why are there no attorneys here or other members of the public? Why is the USPTO director, Deputy Director, why are they not participating? And why are there not more USPTO office of employment or -- I don't know, other advisory committees that might be interested in hearing from people?

Now, I do realize you will read this as a report and that the USPTO is highly skilled at reading. However, as a citizen, I do not know who will read those reports. I actually expected the director to be here today. I was looking forward to seeing him because the last time I spoke to him it was asking if a patent is issued as valid where is the problem with the court? Now, I hoped that I could have either a sidebar conversation or at least have some access to -- a question that maybe he had an answer to.

But that was at the New York Intellectual Property Lawyers Association dinner, their 97th where there were 2,300 intellectual property attorneys represented. Now, this is a very, very, very, very, very, very big business. If you heard the five people who showed up here today to testify to the problem, where are the beneficiaries? Where are the people who are benefitting from the problems that are continuing? How will they be part of the change? How can there be a multi-billion, yea, nay, trillion dollar industry that is not participating in solutions for individual citizens but benefit from the issuing of valid patents by the USPTO.

Now, again, we had some sort of administrative problems. Maybe something didn't get scheduled early enough and there wasn't time for the hearing to go into the federal register and then there will be the report in time for the public to participate. But maybe the Agency, and including the SBA needs to ask how they can get the public involved outside of their own agencies

and outside of their own conversation with each other to included the public, not only in education, but in participation as an American.

We anticipate that there will be administrative problems, but what are the -- how can the citizen, when there's this spiral that's happening patent -- patenting is declining. Individual inventors are being bankrupted and there's not an attorney here to stand up and talk about it and to have an opinion about how minorities, how women, minorities and veterans can be more justly represented and served.

I'd like that to be part of what the USPTO considers and also consider how this testimony itself -- how can the public become more informed? This is a very important issue. Not just informed about the patent system, which is, I think the USPTO does an excellent job with the videos and education, but the citizens themselves do not know about the engagement and in fact we even, as a group discussed how it almost seems like a bad word now. You feel almost ashamed.

I literally at an art gallery yesterday had some woman say, well, her friend was, you know, working in patenting but she was trying to keep everybody else from infringing her patent, and saw that as a really negative thing. And again, it's an overall lack of education that can be easily supported. Easily. The -- Leslie your study, I'm sorry for calling Dr. Leslie -- it sounds like your study and your efforts are very well placed. But again, are you leading sheep to the slaughter? And you know, because I really appreciate the point that you made which I had also initially wanted to make is that it's not as if we have, like in a golf score, some sort of handicap. Just get the information out there to allow people to participate and keep an industry like the intellectual property lawyers from taking advantage of small fish swimming in a shark tank.

Thank you.

MR. TOOLE: Okay. Thank you very much. I think that that leads me to my final comments for today. And I want to reassure everyone in the

room and online that the director and the Deputy Director are deeply involved in this process. We've met several times. They can't be everywhere, although we had the Deputy Director here this morning, that was wonderful. They are deeply involved, and a lot of us are also deeply involved.

It's a multifaceted effort going on with respect to the Success Act. And I just want to reassure you that he's very much involved, and we have some of our senior executive leaders here as well, who have been here the whole time. So I just want to reassure you that we are very serious about the Success Act and all of the leadership at the USPTO are deeply involved, although maybe cannot be present at every event.

I want to echo what you said though, and that is to say that we would love to hear testimony from many, many people from all across the spectrum including law firms, independent inventors, members of the public generally. So I want to echo your call to folks to come and speak

at the oral testimony events, or to submit written testimony because I think it does help us all to hear these -- the plurality of voices. So thank you for mentioning that.

And I just want to say finally, then, thank you to all of you who have expressed your opinions today and this has all been recorded and will be transcribed and included in the record and I appreciate your comments today. So thank you very much and have a great day.

(Whereupon, the PROCEEDINGS were adjourned.)

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CERTIFICATE OF NOTARY PUBLIC

COMMONWEALTH OF VIRGINIA

I, Irene Gray, notary public in and for the Commonwealth of Virginia, do hereby certify that the forgoing PROCEEDING was duly recorded and thereafter reduced to print under my direction; that the witnesses were sworn to tell the truth under penalty of perjury; that said transcript is a true record of the testimony given by witnesses; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this proceeding was called; and, furthermore, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

(Signature and Seal on File)

Notary Public, in and for the Commonwealth of Virginia

My Commission Expires: September 30, 2022

Notary Public Number 301609