

PUBLIC HEARING ON THE SUCCESS ACT

Monday, June 3rd, 2019

9:00-4:00 p.m. PT

Silicon Valley United States Patent and Trademark Office

West Wing Building of San Jose City Hall

26 South 4th Street

San Jose, California 95113

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AGENDA

WELCOMING REMARKS

John Cabeca, Director of the Silicon Valley United States
Patent and Trademark Office

Julie Clowes, District Director, San Francisco District
Office, Small Business Administration

PROGRESS AND POTENTIAL: A PROFILE OF WOMEN INVENTORS ON U.S. PATENTS

Amanda Myers, Deputy Chief Economist, Office of Policy and
International Affairs, USPTO

OVERVIEW OF SUCCESS ACT

Amanda Myers, Deputy Chief Economist, Office of Policy and
International Affairs, USPTO

ROUNDTABLE LOGISTICS

Amanda Myers, Deputy Chief Economist, Office of Policy and
International Affairs, USPTO

PUBLIC TESTIMONY

Robert F. Granadino, COO, inteliGlas Corporation

Cecilia Corral, CareMessage

Stephanie Couch, Executive Director, Lemelson-MIT Program,
MIT School of Engineering

Colleen Chien

BREAK

PUBLIC TESTIMONY

Sheng Tai (Ted) Tsao, President of STT WebOS, Inc.

Britten Sessions, Lincoln Law School of San Jose

Robin Feldman, University of California, Hastings College of the Law

LUNCH

PUBLIC TESTIMONY

Tina Dorr, Counsel, Cantor Colburn LLP, Secretary, Women in
IP Committee, Intellectual Property Owners Association

Liji Gopalakrishnan, Rambus, Inc.

Charu S. Kurani, Facebook

CLOSING REMARKS

John Cabeca, Director of the Silicon Valley USPTO

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1 PROCEEDINGS

2 MR. CABECA: Good morning, everyone. We're going to go
3 ahead and get started so apologies for the delay, and we'll
4 continue to work out our technical difficulties for those online,
5 but I didn't want to put us any further behind the schedules since
6 we have a tight agenda for today.

7 First of all, I'd like to welcome all of you to the
8 SUCCESS Act public hearing. I'm John Cabeca. I'm the regional
9 director here for the Silicon Valley USPTO, and it's a pleasure to
10 be here today to discuss how we can expand the innovation
11 ecosystem. Women constitute over half of the U.S. population, and
12 their participation in the general U.S. workforce was almost
13 two-thirds in 2016, yet women's participation in STEM fields and
14 in the intellectual property system lags far behind their male
15 counterparts. In the United States, less than one-quarter of the
16 STEM workforce comprises women, plus half of these women who work
17 in STEM fields leave after 12 years, most within the first five.

18 The participation of women as inventors named on U.S.
19 patents is even lower. On February 11th, 2019, the USPTO released
20 a report entitled "Progress and Potential: The Profile of Women
21 Inventors on U.S. Patents." And you'll hear a brief overview of
22 that report shortly, and I believe you-all have copies for those

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1 of you sitting here around the room.

2 What you'll find is the study showed that, although the
3 number of patents with at least one woman inventor increased from
4 about 7 percent in the 1980s to 21 percent in 2016, but despite
5 that, with the total pool of inventors in the U.S., women
6 inventors still comprise only 12 percent of all inventors on
7 patents granted in 2016.

8 The purpose of today's hearing is because we all realize
9 that we can and should do better. If we are to maintain our
10 technological leadership, the United States cannot continue to
11 compete with so much talent left untapped. In order to unleash
12 this talent, industry, academia, and government must work together
13 to address these issues and drive towards real progress. We, at
14 the USPTO, are committed to making opportunities for innovation
15 available to everyone.

16 A recent Harvard study found that increasing innovation
17 rates among women, minorities, and children from low-income
18 families could quadruple the rate of U.S. innovation. Clearly,
19 unleashing this untapped potential holds tremendous benefit for
20 all Americans.

21 The Trump Administration and Congress have recognized
22 this critical issue and the need for action. On October 31st,

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1 2018, President Trump signed into law the Study of
2 Underrepresented Classes Chasing Engineering and Science, SUCCESS
3 Act of 2018 -- which is known as the SUCCESS Act. The SUCCESS Act
4 requires the USPTO director, in consultation with the U.S. Small
5 Business Administration, to provide Congress with a report on
6 publicly available patent data regarding the representation of
7 women, minorities, and veterans, along with legislative
8 recommendations.

9 These recommendations should be provided on how to
10 promote the participation of women, minorities, and veterans in
11 entrepreneurial activities, and it should also suggest how to
12 increase the number of women, minorities, and veterans who apply
13 for and obtain U.S. patents.

14 In accordance with the SUCCESS Act, the USPTO has taken
15 steps to gather information on the participation of women,
16 minorities, and veterans in patent and entrepreneurialship
17 activities, and today's hearing, in partnership with the SBA, is
18 one of such efforts. Everyone -- individuals, businesses, and
19 non-profit organizations -- can contribute valuable information
20 and offer productive recommendations. This helps to stimulate
21 entrepreneurialship and use of the patent system by these
22 underrepresented groups. Today's hearing is the second of three

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1 public hearings that the USPTO is holding throughout the country
2 to obtain comment in support of the SUCCESS Act study. The first
3 hearing was held at USPTO's headquarters on May 8th in Alexandria,
4 Virginia, today is our second, and the third hearing will be in
5 our other regional office in Detroit on June 18th. Is that right?

6 At each of these hearings, we welcome representatives
7 from industry, law, and academia to present oral testimony on the
8 participation of women, minorities, and veterans in
9 entrepreneurialship impact activities. We value your insight and
10 recommendations regarding efforts to increase the patents, applied
11 for and obtained by women, minorities, and veterans regarding
12 public policies or other initiatives to promote the participation
13 of such underrepresented groups in the patent system and
14 entrepreneurial activities and regarding the role that the USPTO
15 should play in addressing these important matters.

16 So thank you very much for your participation today. We
17 look forward to hearing everyone's views. And with that, it's my
18 great pleasure to now turn the mic over to Julie Clowes, who is
19 the SBA, Small Business Administration, district director for the
20 San Francisco Small Business Administration. Is that right?

21 MS. CLOWES: Sure.

22 MR. CABECA: All right. Thank you.

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1 MS. CLOWES: Good morning, everyone. Thank you, John,
2 and thank you to the USPTO for hosting this hearing. Obviously,
3 as SBA, we are the agency charged with assisting small businesses,
4 and we do that in a variety of means, whether it's through
5 financial assistance, whether it's through free business
6 counseling and training and access to government contracts.

7 So I think with getting information from the community
8 is really important and critical to make sure that we are
9 providing and using our tools to create tools for you-all and for
10 everyone to access the entrepreneurial system. There's a lot of
11 resources, especially here in the Bay Area, and I am really
12 interested to hear what some of the challenges are from your
13 perspectives to see if we can channel those resources then to
14 provide additional support and make sure everyone has got access
15 to that support to be successful, to be innovative, and to be the
16 next, you know, job creators in our economy.

17 So I really thank you, again, to PTO. I really am
18 looking forward to hearing all of your comments and seeing what we
19 can start implementing right away and then what the
20 recommendations might be moving forward for, you know, new
21 legislation or new programming that will benefit everybody.

22 So I appreciate your time and energy, and, again, I look

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1 forward to your comments and perhaps working with some of your
2 organizations as we move forward, so thank you.

3 MR. CABECA: Thank you.

4 MS. MYERS: Hello. My name is Amanda Myers. I am the
5 deputy chief economist at the U.S. Patent and Trademark Office,
6 and I am here to present -- if I can get my slides to work --

7 MR. CABECA: Try pointing that way.

8 MS. MYERS: I apologize. Technical difficulties. I am
9 going to cut my remarks quite a bit just so we can stay on time
10 with the public testimony.

11 ALAN: Do you want me to go ahead and share that screen
12 right now?

13 MR. CABECA: Yes.

14 ALAN: All right. I just have to focus on that and then
15 I can share the screens.

16 MS. MYERS: I'm okay.

17 MR. CABECA: Okay. Go ahead.

18 MS. MYERS: Well, hold on. All right. Let me get
19 started.

20 I'm here today to present an overview of the report that
21 John referenced entitled "Progress and Potential: A Profile of
22 Women Inventors on U.S. Patents." This is a report that the USPTO

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1 released in February. As I said, in the interest of time, I'm
2 going to go through this pretty quickly and see if there were a
3 few slides, just to catch us back up.

4 But just a quick on motivation and objectives in the
5 report, we know that, historically and currently, women comprises
6 a small minority of patent inventors, and this represents a
7 significant untapped innovative talent that is untapped potential
8 that may spur innovation and drive economic growth. And as John
9 referenced, an interesting report out of Harvard that suggests
10 that harnessing these very intelligent women and children of
11 different racial minorities really could bring about economic
12 growth and spur a lot of innovation outside of what we currently
13 have.

14 And so we developed this report entitled "Progress and
15 Potential: A Profile of Women Inventors on U.S. Patents" in order
16 to study what we know about women inventors in the United States
17 over a 40-year period. We really understand where they're
18 patenting and on the trends that we're seeing over time.

19 And I'm going to skip through this part just in the
20 interest of time and go straight to some of our findings.

21 So this is 40-year trends in women on U.S. patents.
22 These are the women that are named as inventors on U.S. patents.

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1 There are three different trend lines that we're showing. The
2 purple line is the share of patents with at least one woman
3 inventor on the patent teams, the share of patents that have a
4 female as the sole inventor or part of an inventor team.

5 The green line is what we call the women inventor rate.
6 This is actually the share of inventors that are named on patents
7 that are women. And these -- and the yellow line is what we do --
8 is called the women share of total patenting. If there's multiple
9 inventors on the team, we include the patent equally to each
10 inventor on the team.

11 But I'm going to focus us on the first two lines. So
12 the purple line is a figure that we see a lot and we have seen
13 previously in other statistics and other reports that talks about
14 women's increasing participation on patents. We see, over time,
15 there has been some progress with women on 5 percent of patents in
16 the early '80s, up to now, 22 percent of patents having at least
17 one woman on the inventor team in 2018.

18 What we're seeing less of is that women are actually
19 making up or comprising the inventor population at that rate. So
20 the green line shows what portion of inventors, as unique
21 inventors, that are women. And what we see is that that line had
22 grown over time to about 2,000, where it settled at about 10

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1 percent. And since then, we have only seen a little bit of
2 progress.

3 In 2016, only 12 percent of inventors on patents were
4 women. And so while we're seeing upward growth over time, we're
5 actually seeing much slower growth in the last 15 years in all of
6 these indicators than we have in the prior 30. These are just
7 trends that we are showing that we have some progress, but it has
8 slowed in recent years and suggest that more can be done.

9 Lost control of my sights. Okay.

10 MR. CABECA: Sorry about that.

11 MS. MYERS: We know that many factors contribute to the
12 ability and propensity of women and others to become inventors,
13 and one of those is clearly your occupational and educational
14 choice. The vast majority of patent inventors are in the science
15 and engineering fields, and if women are less represented in those
16 fields, we would expect them to be less represented as patent
17 inventors as well.

18 So, in the report, we actually compare the share of
19 patent inventors that are women with the share of women that are
20 in science and engineering occupations. These are occupation
21 rates for females based off of national survey data from the
22 National Science Foundation. And so what you see is that, across

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1 various sciences in engineering disciplines, women are
2 participating at a much higher rate than they are patenting. For
3 example, the top purple line, which is biological and by
4 scientist, women now comprise almost half of the scientists in
5 those fields. However, when we look at patenting in those
6 areas -- pharmaceuticals and biotech -- women are still only about
7 25 percent of inventors.

8 And so the green line is still that same women inventor
9 rate from the prior slide, but this is just to show that we are
10 seeing women in these fields and pursuing these careers but not
11 patenting at the same propensity that we see them in those
12 occupations.

13 And this is the top 20 states. This is the share of
14 women inventors based off of where they reside when the patent was
15 granted. We see the highest rates among Delaware, District of
16 Columbia, New Jersey, and Maryland. These are areas where
17 actually women are just more prevalent in the workforce generally.
18 They tend to be higher female participation rates overall in the
19 workforce.

20 They also tend to be characterized by a lot of public
21 sector and academic activity, which -- where women are also more
22 prevalent in terms of patents.

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1 And this is a look at where women are patenting by
2 technology sector. This is based off of the technology that we
3 observed in the patent. And this is a 40-year picture. You see
4 each decade over time. What we see over time is that women tend
5 to be in certain areas, and that's where also we see the most
6 progress. Women comprise about just over 5 percent of patents in
7 chemistry in the late '70s, early '80s, and in the last decade,
8 they're actually at about 18 percent of patents that are
9 granted -- 18 percent of inventors with patents granted in
10 chemistry.

11 We also see a lot of progress in design patents, which
12 will be included in this report. Where we're seeing much less
13 progress really is in the chemical and engineering. That's not
14 entirely surprising. There are many fewer women in mechanical
15 engineering, so it's not surprising that we are seeing them appear
16 as inventors on fewer patents in those technology areas.

17 But, overall, what we see is women specializing in
18 technology fields and sectors where their predecessors have
19 patented in the past, not entering these male-dominated areas.

20 ARMANDO: You know what, I'm going to (indiscernible.)

21 MS. MYERS: A lot of technical difficulties. Just going
22 to keep going, just in the interest of time.

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1 In the report, we actually profile some of the top
2 patent holders in the country, and we look at the share of women
3 in their inventor populations. And this is very small, so you may
4 not be able to see it. But at the top is Proctor & Gamble,
5 Bristol-Myers Squibb, and Abbott Technologies -- I mean, Abbott
6 Laboratories. These are all pharmaceutical, biotech companies
7 where women do tend to be more prevalent, and we are seeing more
8 participation.

9 And I'm going to do one more slide and then just go to
10 overview of our key findings. When we go back and look at the
11 share of patents with at least one woman inventor on the patent
12 team, we see that most of that progress is really driven by
13 gender-mixed teams. All women teams or just single female
14 inventors continue to comprise only about 3 percent of the
15 patents, and that's been consistent over time pretty much for the
16 last four decades. So all of the participation improvement we
17 have seen over time has been women participating on teams, and
18 what we see is those teams are actually growing in size. Women
19 are on larger and larger teams.

20 Skip that one.

21 So let me just quickly run through the findings in the
22 report. Women continue to comprise a small minority of patent

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1 inventors accounting for only 12 percent of all inventors on
2 patents granted in 2016. Gains in female participation in science
3 and engineering applications and entrepreneurship, which we don't
4 show but is also the case, are not leading to broad increases in
5 female patent inventors.

6 Technology-intensive states and those where women
7 comprise a large percentage of the state's overall workforce show
8 higher rates of women inventors. Women inventors are increasingly
9 concentrating on specific technologies, suggesting that women are
10 specializing in areas where female predecessors have traditionally
11 patented.

12 Businesses have the lowest women inventor rates among
13 the various categories of U.S. patent owners. Business rates tend
14 to be much lower than academics -- academia as well as public
15 research institutes for government-funded patents.

16 Women are increasingly likely to patent on large,
17 gender-mixed inventor teams, highlighting the growing reports of
18 understanding the relationship between gender and innovative
19 collaboration.

20 So that is an overview of our report. I have handed out
21 copies. I encourage you to look through it for more detail. And
22 now, I'm going to switch over and discuss -- spend a few minutes

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1 reviewing key parts of the SUCCESS Act, which is the reason we are
2 all here today.

3 The SUCCESS Act -- this is a tongue twister. The
4 SUCCESS Act was signed into law by President Trump on October
5 31st, 2018. It provides for a period of one year in which the
6 USPTO is to develop and deliver to Congress a study on the
7 participation of women, minorities, and veterans in patenting and
8 entrepreneurial activities.

9 And let me highlight some of the key requirements of the
10 study, as they are stated in the legislation. The study is to
11 identify publicly available data on the number of patents annually
12 applied for and obtained by women, minorities, and veterans. Per
13 this provision, we are seeking to identify publically available --
14 that is, non-proprietary -- information that will allow us to
15 characterize the participation of women, minorities, and veterans
16 among the patent inventor population.

17 The study is also to identify the benefits of increasing
18 the number of patents applied for and obtained by women,
19 minorities, and veterans, as well as the companies that such
20 individuals own and manage. Here, we are aiming to document the
21 benefits, those economic, technological, and societal of
22 attracting more women, minorities, and veterans to innovative

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1 activity.

2 And, lastly, the study is to provide legislative
3 recommendations regarding how to promote the participation of
4 women by using veterans and entrepreneurial activities and
5 patenting, particularly increasing the number of patents applied
6 for and obtained by these underrepresentative groups. We are
7 interested in documenting public policies and other initiatives
8 intended to engender real change and effectively expand the
9 innovation ecosystem to include more women, minorities, and
10 veterans.

11 With these requirements in mind, we have developed and
12 began fulfilling a SUCCESS Act implementation plan. We are
13 consulting with the Small Business Administration as well as the
14 U.S. Treasury Department and Department of Defense to compile
15 richer information on underrepresentative groups among patent
16 inventors. We issued a federal registry notice, commencing a
17 two-month public comment period to compile information directly
18 from individuals, companies, associations, and others.

19 In that federal registry notice, we posed 11 questions
20 that are to provide a preliminary guide to aid the USPTO in
21 collecting relevant information and to evaluate possible
22 administrative and legislative recommendations that may be

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1 provided to Congress. These questions, which I'm just going to
2 read a few of them, include: What social and private benefits
3 would you identify as resulting from increasing the number of
4 patents applied for and obtained by women, minorities, and
5 veterans? Should the USPTO collect demographic information on
6 patent inventors at the time of patent application and why? What
7 entities or institutions, if any, should or should not play an
8 active role in promoting the participation of women, minorities,
9 and veterans in the patent system and entrepreneurial activities?
10 What public policies, if any, should the federal government
11 explore in order to promote the participation of women,
12 minorities, and veterans in the patent system and entrepreneurial
13 activities? And what action should the USPTO take to address the
14 participation of women, minorities, and veterans in the patent
15 system and entrepreneurial activities?

16 During this two-month public comment period, we are
17 holding three public hearings across the country to provide the
18 public with the opportunity to speak publicly on crucial questions
19 raised by the SUCCESS Act. Our objective at these hearings is to
20 listen and collect as much information as possible from the
21 public. Today's testimony will be recorded and transcribed and
22 included in the official record for the SUCCESS Act. We will

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1 convene our final public hearing on June 18th, as John mentioned,
2 at our regional office in Detroit. We encourage interested
3 parties in the Midwest region to participate in that hearing.

4 We also acknowledge that not everyone wishing to provide
5 insights and recommendations relevant to the SUCCESS Act will be
6 able to participate at one of these hearings, whether due to their
7 locations or other constraints. Consequently, we will be
8 accepting written testimony submitted via email until the comment
9 period closes on June 30th, 2019. We urge those unable to speak
10 at one of our hearings to contribute to the study by submitting
11 written testimony.

12 All of the information gathered today and throughout the
13 public comment period will be reviewed and incorporated into the
14 materials we put together in response to the SUCCESS Act. The
15 USPTO director and deputy director will be actively involved in
16 this process as expanding the innovation ecosystem is a critical
17 priority to the USPTO and our leadership.

18 Turning now to some logistics for today's hearing,
19 myself, or Regional Director John Cabeca, will introduce each
20 individual scheduled to testify according to the agenda. Each
21 individual has previously indicated the duration of time they wish
22 to speak. A clock is provided over here to my left to indicate to

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1 speakers when that time has concluded. We ask that each speaker
2 stick to their requested speaking times as much as possible to be
3 respectful of the time and schedules of subsequent speakers.

4 After all scheduled testimony concludes this afternoon,
5 there will be an open floor period for unscheduled testimony. Any
6 speakers wishing to speak during their scheduled -- I'm sorry,
7 wishing to speak beyond their scheduled time are welcome to come
8 forward again during this open floor period.

9 We will have two sessions of scheduled testimony this
10 morning with a break in between. We will then break for lunch and
11 reconvene for a third session of scheduled testimony starting at
12 1 p.m.

13 With that, I'm going to ask John to come back and
14 introduce our first -- any other logistics and introduce our first
15 speakers. Thank you.

16 MR. CABECA: Thanks, Amanda.

17 So I just wanted to echo Amanda's comments with respect
18 to today's logistics and add a couple more. One that may be of
19 great importance is where are the bathrooms. So if you go through
20 the door in the back and then continue straight around the guard's
21 desk and exit out of that door, they will give you a badge with
22 which you will need to get back in to enter through the side

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1 entrance there; otherwise, you'll have to walk all the way around,
2 and you don't want to do that.

3 With respect to the logistics for the hearing, again, I
4 just want to thank you-all in advance for your assistance with
5 helping us stay on schedule -- and thank you, Amanda, for getting
6 us back on schedule -- and, also, to ask that you stay on topic.
7 I think that today's topic is of such great importance that we
8 look forward to hearing all of the views from the community on
9 ways that we can improve the level of engagement and activities
10 that we have with women, minorities, and veterans in the
11 entrepreneurial-impacting space.

12 So just, again, ask that you try to keep your remarks to
13 that topic. And also, Amanda mentioned the timer, so when we're
14 about one minute -- in order to help us keep on schedule, when
15 we're about one minute left from your scheduled time, we will
16 chime in and give you a notice, just so you have a heads-up that
17 you have a minute left, and if needed, to wrap up any final
18 comments you would like to make. And, again, thank you for all of
19 your help with that.

20 So the last thing I wanted to add is we also will not be
21 taking Q and A throughout the event today, so, on the scheduled
22 testimony, it will be made of record. We have a recorder here

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1 that is tracking all of the testimony for the USPTO and the SBA to
2 help them in developing a report.

3 So, as a result, we won't be taking Q and A, but if
4 there is any comments that you would like to make, then we do
5 kindly ask that you wait until the open sessions at the end of the
6 day.

7 With that, I would like to go ahead and start our
8 hearing and introduce our first speaker. The first speaker is
9 Robert Gran- --

10 MR. GRANADINO: Granadino.

11 MR. CABECA: -- Granadino -- thank you, Robert -- who is
12 the chief operating officer at inteliGlas Corporation. Robert.

13 MR. GRANADINO: Thank you. All right. Thank you,
14 Director Cabece, Directors Clowes, and Ms. Myers.

15 Ladies and gentlemen, my name is Robert Granadino. I'm
16 the COO of InteliGlas Corporation, which is the world's leading
17 artificial smart building platform in the world. Today, I'm
18 really here speaking about my history with patents in my previous
19 life. My background includes -- I have a BA from UC Berkeley in
20 political science, and I'm a nine-time U.S. patent grant recipient
21 as well. Back in May of 1992, my partner and I came up with a --
22 what we thought was a pretty good idea, and we developed the

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1 popular standard for the ergonomic computer keyboard, which was
2 licensed to the industry. We did that back in 1992.

3 My background, I think for today's discussion, how I
4 fall in line is really I'm an independent inventor. I'm also a
5 minority. My father was Mexican-American, veteran of World War
6 II, had a background in the -- as an industrial designer in the
7 Gemini, Mercury, Apollo, B-1 bomber program, working at North
8 American Rockwell.

9 But today, really, I'm here to be a bit critical. All
10 right? Because I bring 20 years of experience with our patents,
11 defending our patent portfolio against some very large infringers,
12 and it can be quite brutal out there. So I have got some ideas, I
13 have got some criticisms, and I have got some recommendations for
14 the USPTO. So I'm going to speak from that level.

15 Basically, I want to touch on five or six different
16 areas. One is the imbalance in the disadvantage that independent
17 inventors have. Women, minorities, veterans, they all fall into
18 the same category if you're an independent inventor in the
19 industry, the way it's currently set up to date. U.S. patents can
20 be weaponized against independent inventors, that means women,
21 men, you know, all sorts of minorities and veterans that, you
22 know, come in to play here.

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1 You also, as an independent inventor, from my
2 perspective, deal with innate corruption in the system, whether
3 it's with attorneys representing you or the other side, judges,
4 even examiners potentially. I wish I had more time, I could speak
5 to a lot of that, but I'll get into a bit of it.

6 And then I also want to touch on safeguards, safeguards
7 that can be put in place, but without these safeguards, I don't
8 think that asking women, minorities, independent inventors,
9 veterans to get involved in the patent process makes a lot of
10 sense because it can be, you know, very risky financially to go
11 down this road. You know, part of it is the excitement, of
12 course, of inventing, but the other part of it is really defending
13 your invention when it's infringed, and that could be quite a
14 daunting process.

15 So I do want to begin by saying something striking here
16 which, in my opinion, I think U.S. patents from the United States
17 Government is a terrible product, and I'll tell you, you know,
18 part of the reason that this is, you know, not a good product is
19 that there is an issue with validity -- a validity process that
20 happens in the courts after a patent is issued that can really
21 take it down, you know, a very difficult path as an independent
22 inventor.

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1 So let me talk a little bit about that imbalance here.
2 As an independent inventor, as you, you know, are getting your
3 first patents and apply to the marketplace, if an infringer comes
4 along, you're required to stand up against that infringer if you
5 think he's infringing your patent, and part of that process is to
6 simply obtain legal counsel and notify the infringer that they're
7 infringing on the patent. That can simply lead to predictable
8 outcomes, which is, in part, a validity claim that's typical in
9 the process where engaging with an infringer, typically what will
10 happen is that the other side will say that a patent is invalid,
11 it shouldn't have been issued. And this whole process that occurs
12 here with these typical validity challenges can go on for years,
13 and without adequate funding from an independent inventor, you
14 really don't have much of a chance standing up against some of
15 these big dogs in the marketplace.

16 And what I mean by that is simply that the typical
17 strategy of a large infringer will be to run the independent
18 inventor out of money. So the landscape basically that you're
19 going into is just that. You're looking at years, hundreds of
20 thousands, millions of dollars -- I see a gentleman laughing in
21 the background; maybe it is that he understands what I'm talking
22 about.

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1 But this invalidity aspect is part of the Achilles heel
2 of the patent system in obtaining a patent, and I think that
3 that's, you know, from my personal point of view, unnecessary,
4 sort of ridiculous. These patent invalidity actions through the
5 statistics wind up to be 9 percent successful. That means, 91
6 percent of the patents are valid, but in these invalidity
7 challenges, you could wind up in court, having a judge re-examine
8 the entirety of the scope of the patent itself.

9 And, typically, this is what the attorneys, as well as
10 judges will say. They'll say, Well, we have to go back to the
11 very beginning of your patent. We have to examine everything
12 within that patent to see if it was even valid. Of course the
13 defense is going to be saying that it's not valid, there's plenty
14 of prior art out there, and so on and so forth. So this strategy
15 can really drain the funds of an independent inventor quite
16 handily, and that is the strategy.

17 So this is also -- I just want to sort of lay into or
18 describe a little bit about the high risk that is involved in
19 defending your patent. So it may sound, you know, fairly flaccid
20 at this point in time. Okay, so you have to deal with some
21 attorneys that claim that there's, you know, not validity within
22 the patent itself.

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1 And then, you know, after you get through all of that
2 process, which can be years, then you wind up talking about the
3 infringement. And typically, the judges and the defendants will
4 say that and recognize that, that you're not going to get around
5 talking about the infringement question until you get through the
6 invalidity question. And that invalidity question can exist at
7 court and it can also be thrown back to the USPTO. It can be
8 thrown back into it under a re-examination. So the threat to the
9 independent inventor during this process is that they're going to
10 lose the patent, and during this process of, you know, negotiation
11 with the infringer, the infringer is basically saying we're going
12 to take your patent away, and then you're going to wind up with
13 nothing. All right? So how about if we cut a deal on pennies on
14 the dollar and you walk away from this?

15 That's difficult, right, especially if you put a lot of
16 time and effort, research and development, and you believe in your
17 patent, you know that it's infringing, but you have questions.
18 You don't know what you don't know. You don't know where the
19 prior art was. You know that it was examined by the USPTO and
20 that you had to go through a pretty rigorous program to get
21 yourself to this point, and now you're having it all questioned
22 once again.

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1 And then the dirty side of it is that, if you withstand
2 all of those challenges and you get through the -- get up through
3 the question of infringement, then you're dealing with the
4 potential of losing the case. And if you lose the case -- and
5 this is what has happened to my partner and I -- the threats of
6 holding us liable for attorney's fees and costs are real,
7 especially when you're dealing with millions of dollars.

8 A friend of mine had a water balloon patent that just
9 recently settled out, and reportedly -- I think it was the "L.A.
10 Times" or the "New York Times" reported on this -- the defendants
11 in this case spent \$20 million in outside legal fees for
12 attorneys. And this is relatively, you know, a small-type
13 product. The revenues reportedly from the company for the water
14 balloons was \$100 million a year. And from the perspective of the
15 inventor, that's his money being used against him in this case.

16 So what I want to say is that, at the end of this, there
17 are even defenses that will threaten to pierce the veil, if you
18 have a corporate LLC, to pierce the -- threaten to pierce the
19 liability -- limited liability aspects of it and go after the
20 inventor personally.

21 So how does that happen? Well, it happens that, if you
22 drain your funds and fighting and defending your patent and your

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1 LLC doesn't have any funds left, the defense attorneys will turn
2 and say, "Well, somebody's got to pay the defense fees here," and
3 they have got a defunct LLC, so they'll attempt to go after you
4 individually by piercing the veil.

5 So these are some of the tactics that go on. So when we
6 take a look at getting minorities, women, veterans, typically, I
7 think we think of that as independent inventors. We're not
8 talking necessarily here -- at least just my interpretation --
9 that we're not talking about corporate invention. I mean,
10 certainly, it's noble to get, you know, folks in a corporate
11 environment who are in this class to participate in patents, but,
12 you know, that's -- to put it in the vernacular -- not where the
13 money is. Right? It's a pat on the back and maybe a small bonus,
14 but it's not -- you know, it's been my experience, working at some
15 of the very large corporations, that they don't have programs to
16 really reward inventors.

17 So we're really talking about independent inventors.
18 And in order to make it worthwhile under the first -- under this
19 construct, you have to talk about very big dollars. You know, the
20 type of dollars that we were talking about in our cases were tens
21 of millions of dollars, in excess of \$50 million. And it would
22 only make sense because, at the end of the day, if you win, you

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1 know, you win something below that amount, well, the first cut
2 goes -- if you're in a contingency with your attorneys, the first
3 cut goes to your attorneys. The second cut goes to paying all
4 those expenses of experts and court fees and everything else that
5 go along with it. And then, after that, that's where you get your
6 cut. So the dollars have to be big because the risks are very
7 sizable.

8 So with two minutes left here, I have some
9 recommendations. All right? And, you know, I know that these
10 recommendations may run in the face of, you know, the going
11 standard, but I would say, if you want to get -- if USPTO wants to
12 get independent inventors involved -- women, minorities,
13 veterans -- you're going to have to take a look at this validity
14 process. In my opinion, you know, anything that's fair during the
15 examination process of a patent, all the way up to the point that
16 it is issued, but the patents don't have any teeth currently. So
17 if you take a patent out, you know, the other side simply laughs
18 at you now because everything has to be re-examined once again.

19 So I would recommend that statutes be crafted to end the
20 validity issue prior to the issuance of the patent itself. So
21 anything that -- any challenges that want to be made during
22 that -- and up to the point of the issuance of the patent would be

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1 gained. Anything after that, you can't talk about, you can't
2 raise issues or make claims about invalidity at court or, you
3 know, re-examination or anything else post issuance.

4 Now, what would that do? That would simply, you know,
5 take, in large part, this phony argument -- again, only 9 percent
6 are successful, so that means 91 percent of the patents issued are
7 valid. It would take this weaponizing of the legal funds to get
8 that out of the way and then go straight to the infringement
9 question. And that's the important thing is talking about whether
10 or not this product in the marketplace infringes your product and
11 have an instrument in the patent itself that has some real weight
12 behind it and some real teeth; that if an infringer decides to
13 infringe your patent, they're not laughing at you, that they're
14 actually quite concerned.

15 So with that, I'll come back.

16 MR. CABECA: Thank you, Robert.

17 MS. MYERS: And now we'd like to invite Cecilia Corral
18 -- Corral?

19 MS. CORRAL: Corral.

20 MS. MYERS: Corral. Cecilia is the co-founder and VP of
21 product at -- CareMessage or CareMessage?

22 MS. CORRAL: CareMessage.

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1 Thank you all so much for having me here today, and
2 thank you for the U.S. Patent and Trademark Office for just
3 providing this forum for us to share our thoughts on how to get
4 more women, minorities, and veterans involved. I noted the call
5 for the commentary also posed a few questions surrounding
6 entrepreneurship, so I wanted to take today to talk about my path
7 both as an entrepreneur, as an inventor, that sits at the
8 intersection of gender and race, but I also want to place a
9 special focus on the important issue of socioeconomic status. I
10 think the intersection of these characteristics place people from
11 underrepresented backgrounds at a higher disadvantage than more
12 affluent individuals, even when they both identify as women or
13 minorities.

14 So I'll take today to highlight a number of my personal
15 challenges and the opportunities available to people like me the
16 in K through 12 education, higher education, and in the tech
17 industry in hopes that it can spark some ideas and ways we can
18 better support women, minorities, and veterans throughout their
19 journey.

20 So my name is Cecilia Corral. I'm the co-founder and VP
21 of a product at CareMessage. We're a healthcare technology
22 non-profit that helps connect underserved patients with healthcare

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1 organizations using text messaging. My family came to the United
2 States from Mexico when I was one year old with nothing other than
3 the clothes on our back, and I grew up in the Rio Grande valley of
4 Texas. We relied very heavily on food stamps and medicaid to make
5 ends meet. My parents sold goods at a local flea market.

6 Over 90 percent of my community lived in poverty, and no
7 one I knew had gone to college. When I was in high school, I
8 looked around and I realized that I wanted a better future, and my
9 parents encouraged me to continue striving for more. So in my
10 junior year of high school, I became a guinea pig for a new
11 program aimed at helping high school students obtain an
12 associate's degree in engineering before their high school
13 graduation. This program played a pivotal role in my acceptance
14 to Stanford University, where I went on to obtain a bachelor's
15 degree in product design engineering.

16 So when thinking about how educational opportunities
17 enable someone from the minority group to pursue entrepreneurial
18 activities, I encourage you to look at early college high schools
19 and dual-enrollment programs. These programs in South Texas led a
20 partnership between local school districts in South Texas College
21 have provided a bridge for students from low social economic
22 backgrounds that would have never been able to afford going to

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1 college. And I think the seed needs to be planted in our K
2 through 12 education to show students very early on that they have
3 options available.

4 So after graduating from Stanford University, I made my
5 way back to Texas to study chemical engineering at the University
6 of Texas at Austin; however, I was the only woman and the only
7 Latin-mixed person in my classes, and I had a really hard time
8 making my ideas be heard by my classmates. During a class
9 project, we were tasked with creating an assistive device that
10 could help children and adults with mobility issues fold laundry.
11 My innovative idea was to take what I have learned from my brother
12 and my sister's experience in the military to roll laundry instead
13 of folding it. I designed and built a device that was sturdy
14 enough to roll all types of laundry, from clothing to bed sheets.
15 At the time, we considered filing a patent because no such device
16 existed, but when we started to talk details, it was very clear to
17 me that my original idea was being appropriated by the male team
18 members, and I had no support from male faculty to ensure my
19 contributions were not pushed aside.

20 My male advisor then told me "boys will be boys" when I
21 tried to advocate for myself and the fact that my male peers have
22 taken my ideas and marketing them as their own. So, at the end of

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1 the day, I killed the idea of filing a patent because if I wasn't
2 going to be first inventor, it felt worthless.

3 Microaggressions are sadly a regular occurrence for
4 women and minorities in academia and the workforce. I believe
5 educational institutions, like the University of Texas at Austin,
6 should be held accountable for the environment they create, where
7 women and minorities do not feel welcomed. I encourage you to
8 think about a reporting process that would allow inventors to
9 report privately or provide proof of being first inventor in
10 situations where sexism or racism is preventing them from filing a
11 patent.

12 So after being frustrated by my experiences in graduate
13 school, I decided to drop out and co-found CareMessage. At the
14 time, I really felt like I had nothing left to lose, that I didn't
15 know well enough the challenges that came with entrepreneurship to
16 be discouraged. So one thing I did learn very early on was I was
17 going to continue to be the only woman in the room.

18 It's no surprise that the tech industry in the United
19 States is the problem with women and a bigger problem with
20 minority women. In 2013, Tracy Chow bravely forced the industry,
21 who acknowledged it had a problem with higher and retaining female
22 engineers, by simply gathering data. Over the years since, we

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1 have seen little to no movement from large technology
2 organizations like Google, Facebook, and Microsoft. All of them
3 have less than 50 percent women and Latin-mixed employees in the
4 single digits.

5 I believe this needs to change and technology companies
6 should be penalized for not showing improvements at diversifying
7 their workforce, particularly in critical areas of product design
8 and technology. By excluding women and minorities, they have
9 limited these populations' ability to generational wealth and
10 participate in the creation of novel ideas.

11 On the venture capital side, the progress is equally
12 weak. According to Crunchbase, 17 percent of venture funding is
13 funded to companies with at least one female founder, in contrast
14 with 83 percent to only male founders. Most of the excuses from
15 the venture capital world and the tech industry are the same; that
16 we women Latinos simply do not exist, so we can't be hired or
17 funded.

18 In 2018, I decided that I have heard enough excuses, and
19 I set out to find Latino founders myself. So over the course of a
20 few weeks, I was able to identify 50 Latino founders and have
21 raised over a million dollars in funding. This year, my list
22 reached 100.

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1 So let me be clear, these women have been here all
2 along, but for some reason, they were never given the same level
3 of disability or funding as other founders. What I learned from
4 collecting this data is that it's helpful to shine light on the
5 problem and showcase founders as a way to aspire others to see
6 these challenges can be overcome.

7 Lastly, tomorrow, I will issue my first patent, Patent
8 10,311,535, on the use of text messaging for health coaching.
9 CareMessage is a non-profit organization, and although a number of
10 our competitors in large organizations are infringing on our
11 patent, we had actively decided not to defend it mainly for two
12 reasons. Number one, in the tech industry, when a small company
13 tries to defend the work, it's labeled as a patent troll, and this
14 is something that does not align with the values of our company.

15 And, two, since we know the process to defend patents is
16 broken, we think it would be a waste of our limited resources to
17 get ourselves into litigation with companies that are much larger
18 and better resourced. We are very proud of our innovative work,
19 but sadly, the current patent system turns these innovations
20 into something we can only showcase and talk about, not enforce.

21 I hope my story helps shed some light into the multiple
22 barriers that prevent women and minorities from participating in

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1 the patent and entrepreneurship ecosystem. There's value in
2 having data about this problem at different stages to be able to
3 force the necessary conversations of social justice issues that
4 have plagued this country for centuries. We're a melting pot of
5 people that we are here before and came from across the world, and
6 I think it's our duty as a nation to boast freedom and opportunity
7 to ensure that all people have the same opportunities to build the
8 innovations of tomorrow.

9 So, in summary, I have five summarized recommendations.
10 The first is to fund education programs that provide opportunities
11 for low-income students to find their path into STEM fields while
12 in K through 12. These programs provide students with the
13 confidence and skills they need to succeed, and I think they play
14 a key part in helping people from underrepresented backgrounds and
15 poverty.

16 The second is to provide a way for inventors that lack
17 the resources to file their patents and defend their work.
18 Unwelcoming environments in academia and the workforce are pushing
19 women, veterans, and minorities out. For people that come from
20 low socioeconomic backgrounds, the constant lack of resources is
21 likely a reason why patents are not filed in the first place.

22 The third is to hold the tech and the venture capital

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1 industry accountable for the demographic background of their
2 workforce and leadership positions. This should apply to everyone
3 from small 10-person start-ups to multinational corporations where
4 they're putting their money and their resources directly impacting
5 (indiscernible) to invest in innovation.

6 The fourth is to gather data on patents filed by women,
7 minorities, and veterans. This is critical for accountability and
8 to measure progress. And I think, when gathering this data, ask
9 people to self-identify instead of making assumptions. Latinos
10 come in many different forms because we are a mixture of
11 backgrounds. You can't simply go off of someone's name or skin
12 color. Being asked to self-identify is not intrusive as long as
13 you are clear about why you're asking for this information,
14 provide an option to opt out, and you don't use this data to
15 evaluate if a patent is issued.

16 The fitness to provide disability to those of us who are
17 already here, because you can't be what you can't see. Like with
18 the tech industry and the venture capital world, my guess is that
19 you will have a lot of women and minorities like myself that have
20 been awarded patents or in the process of being rewarded one. I
21 recommend that you invest in marketing campaigns that share those
22 stories throughout the right channels so we can inspire other

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1 inventors.

2 So, in closing, I think patents are a mark of
3 innovation, but without enforcement from our government, they will
4 continue to be generated only by those that already have the means
5 to do so. Along the way, women, veterans, and minorities face
6 multiple challenges that deter them from entering the
7 entrepreneurship ecosystem. We need baseline data to understand
8 how big this problem is, and we need measurable strategies and
9 results to ensure we provide equal opportunities for women,
10 minorities, and veterans to participate in creating the
11 innovations of tomorrow. I think that by increasing the number of
12 women, minorities, and veterans that participate in the
13 entrepreneurship and patent system, you will enable the people
14 from these communities to solve the critical problems that are
15 important to them and the people that are like them.

16 For me, that innovation has meant helping underserved
17 patients to improve their health using mobile technology. Thank
18 you.

19 MR. CABECA: Thank you very much. We'd like to
20 introduce our next testimony, and that will be delivered by
21 Stephanie Couch, who is the executive director for the
22 Lemelson-MIT program at the MIT School of Engineering. Stephanie.

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1 MS. COUCH: Thank you. I am an education researcher who
2 has been, for the last three years, trying to understand what is
3 the pathway of an inventor. And so I will lead you to a copy of a
4 new publication that just came out, special issue from the
5 National Academy of Inventors; it has a number of different
6 articles on invention education as well as a detailed answer to
7 some of the questions that you raise in 15 minutes, but I don't
8 think we can touch on everything, so I'm just going to just
9 highlight a few things.

10 First of all, our program, the Lemelson-MIT program, has
11 been trying to inspire young people across the nation to pursue
12 creative and inventive lives for 25 years. One of the ways we do
13 that is we give a \$500,000 prize each year to a mid-career
14 inventor who has done something significant in the world in order
15 to have someone to raise them as a source of inspiration.

16 We also search the nation and give prizes to college
17 teens that have created inventions and graduate students who have
18 also -- engender the spirit of creativity and inventiveness, and
19 we give those awards to the students in four categories: Cure it,
20 use it, eat it, and drive it.

21 And so when I look at the students who won the prizes
22 and what they have invented, I think there's a lot of good data

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1 there, as well as those who have applied for those prizes, to look
2 at what are the possibilities if we had more diversity in the
3 patent pool. We can look at what things have been created and
4 brought forward. But we have not analyzed that data in that
5 regard yet but we could.

6 But I have been working to analyze information from the
7 invention education programs we have offered with high school
8 students and middle school students for the past 15 years, and
9 today, I want to talk more about what we have learned about the
10 development of inventors in the high school years. We have worked
11 with 450 high school teachers, provided them with professional
12 development, and then we have provided grants to 243 high school
13 teachers and teams of students -- there have been 2,750 students
14 participating over the past 15 years in 43 states, and the most
15 grants have been awarded in California, Massachusetts, Florida,
16 New York, Oregon, Texas, New Jersey, and Virginia, and eight of
17 the high school teams have received patents for their work.

18 So a number of the questions that you have raised for
19 this hearing can be answered through the research we have been
20 doing on the work with the teachers and the high school students.
21 Question 6 asks about the educational and professional
22 circumstances that affect the ability of women, minorities, and

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1 veterans to apply for patents or to pursue entrepreneurial
2 activities.

3 Based on our experience, we think that the opportunity
4 for young people to learn to invent is especially helpful if it is
5 in a team-based format with differentiated roles. A lot of times,
6 the young women who come to these teams come because they're going
7 to be the team leader, they're going to be the communications
8 person, the project manager, and along the way, they discover
9 their skills and capabilities in the STEM areas, and at the end of
10 this year-long experience that they have, we can see that their
11 interest, their confidence, their desire to persist in STEM
12 college and career pathways falls out from that team-based
13 experience.

14 I think if we ask them, you know, do you personally want
15 to come invent a solution to a problem, they would, maybe in the
16 beginning, wouldn't feel the confidence, but by the end, these
17 young women that were interviewed would say, Oh, heck yeah, I'm an
18 inventor, and here's what I'm going to invent next. And so we see
19 the power of the experience.

20 Question 7 asked about the socioeconomic factors that
21 facilitate or hinder the ability of women and underrepresented
22 students. And, you know, again, we have end-of-year experience

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1 data from 15 teams a year for 15 years, but recently, we have been
2 doing case studies and I have looked at three young women, three
3 young men, and I have compared what we can get out of our
4 ethnographic interviews. And what we see is that the young men
5 have had a lot of experiences, all the way from back in
6 kindergarten in after-school programs like robotics, they have
7 someone in their home who has been talking to this from an early
8 age. A lot of times, these ways of inventors are passed down
9 through families. We see them participating in experiences and in
10 school, whereas the young women who are coming into these teams
11 and having these experiences, this is the first time. And so that
12 dovetails with, when we bifurcate our end-of-the-year experience
13 data why young women and students from underrepresented
14 backgrounds are rating much higher than the others what they have
15 gotten from this year-long experience because they have not had it
16 at all through their years of schooling. And so it really speaks
17 to the comment of a prior speaker of needing these experiences to
18 happen by design in the K-12 years.

19 Question 8 asked about the entities or institutions that
20 should play an active role. In the model that we developed all
21 through the school time, the K-12 schools get involved, colleges
22 and universities get involved, STEM professionals in the community

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1 get involved, and rank-and-file people who have problems that need
2 to get solved get involved. And it's the student being able to
3 pick, not happen upon, where a problem is given to them that they
4 have to solve but where the students get to pick by conversing
5 with people in their community and find something they personally
6 care to solve that makes it a lot of the difference. So all of
7 these folks have to be involved in an ecosystem-driven model.

8 Question 9 asks about the policies that the federal
9 government should explore, and you know, we have been able to do
10 this work because we're founded by a family foundation. The state
11 and the federal education policies and funding formulas do not
12 support this kind of work. We do not fit, which gets to one of
13 your last questions about policies that hinder.

14 What happens now is our education standards, for
15 example, in science and engineering, they lay out a linear
16 progression of scaffolded learning of particular concepts and
17 practices that grow year by year. And when we form teams of kids
18 and they pick a problem they want to solve that means something to
19 them, we cannot say that you're going to learn a particular
20 science concept that's appropriate for 11th and 12th graders.
21 You're going to learn science and engineering concepts appropriate
22 to the invention.

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1 And if we allow that to fall out, there is meaningful
2 STEM learning taking place. I'll give you an example of how this
3 works. So one team that we have had is one of many examples. It
4 was a team of young Latinos from Southern California where an
5 after-school leader recruited them from their high school math
6 class. And this team of girls decided that the problem they
7 wanted to solve was their homeless moms would get cellphones from
8 the county, and they need to be able to charge them. So the young
9 women invented a solar tent that would charge the cellphones.

10 So you can see how they're drawing on something that
11 meant something to them, was close to them. We asked them how did
12 you come up with the idea, and they said, we're just one paycheck
13 away from that.

14 We asked them how they learned to do the coding
15 required, and they learned by watching videos on their cellphones,
16 and they describe their iterative cycle and how they wanted to
17 give up, and yet, they persisted until they could get it to work.
18 Again, that kind of experience changes lives. And I cannot say
19 you're going to learn the types of environmental science problems
20 that we specify for 11th and 12th graders, because that wasn't an
21 environmental concept, it was different.

22 So that's why we need to be able to put this type of

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1 strand of learning on the school day with educators supporting it,
2 but it may not fit exactly what we have today. You can make the
3 claim this is a great career or technical education strand in the
4 school day and workforce development, yet when you look at those
5 funding sources and strands as well, they tend to be specific to a
6 particular industry sector, and this kind of work is
7 transdisciplinary, it cuts across sectors. So we really need --
8 if you're going to consider a workforce, it would be an invention
9 and innovation strand that cuts across all industry sectors.

10 So we have some work to do on policies, and I'd love to
11 share more if you decide to dig in deeper in your final report.
12 Let's see.

13 So I think one thing that could be especially helpful is
14 if you were to look at models like ours. We have run across other
15 models from other colleges and universities in our work. Some of
16 them are documented in the journal, which I'll leave you a copy of
17 that. But, regardless, because teaching the process and practices
18 and ways of thinking as an inventor are so different than teaching
19 a science and engineering class or a math class, we probably need
20 to start with a handful of centers that could do this kind of work
21 in our communities, grow the models, and grow the kinds of
22 programs that you need to orient K-12 teachers to teach in this

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1 kind of way.

2 In our research, we have been studying the students and
3 the impact. Now, we have been studying the educators who carry
4 out these kinds of work with their students and found that 67
5 percent of our teachers last year had a career in industry prior
6 to teaching. So that, at least, gives us some clues as to, you
7 know, the kinds of teachers who may, with a little more
8 experience, can be especially good in creating these kinds of
9 systems that need to exist and then we can -- after we grow a more
10 formalized system in selective regions, the state can grow that
11 out.

12 Let's see. This is still a hard road to go down, but we
13 have found that we have been effective at being able to get young
14 women to participate in these kinds of invention education
15 projects. 35 percent of our students have been female. And our
16 percentage from underrepresented backgrounds varies from year to
17 year. In 2017, it was 44 percent. In 2018, it was 29 percent.
18 So, you know, we still have work to do, but it is an effective
19 approach, especially given the numbers that were cited in the
20 beginning of the hearing. And I do think that a lot of the
21 motivation to participate comes from the desire of young people to
22 be engaged in meaningful work that helps people and changes lives.

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1 And, you know, again, in the ethnographic interviews,
2 some of the students were telling us this was the first time that
3 they felt in their life that, as they engaged with the community
4 around the problem, as well as getting feedback on the design of
5 their prototype, that this is the first time they had a meaningful
6 conversation with an adult.

7 And so I think there are lots of benefits that can come
8 from an invention education strand in K-12 that would go alongside
9 what we otherwise teach, and some of that just has to be about a
10 social-emotional learning benefits. They go through struggling,
11 persisting, coming out the other end with something you have
12 created and connecting with members of your community.

13 MR. CABECA: Thank you.

14 MS. MYERS: Now, I'd like to invite up Professor Colleen
15 Chien up to the podium. Professor Chien is from Santa Clara
16 University School of Law and Columbia Law School.

17 PROFESSOR CHIEN: Good morning and thank you so much to
18 the PTO for having this meeting today and to everybody for being
19 here. It's my pleasure to testify a little bit and use my time.
20 I come out from academia and research, where I have been spending
21 the last 12 years trying to use patent data to advance innovators
22 that patent but not just have an innovation and have a chance for

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1 me to come up and reflect a little bit on this as part of this
2 historic effort today.

3 So I want to use my time to make three points based on
4 trying to work with patent data and also try to understand the
5 various drivers that are contributing to the current gaps, and I
6 would say underutilization of our country's talent. And this all
7 took off from my work in government where there was a real effort
8 when I was in the Obama Administration to really think about
9 innovation for all, by all, and to really think about all the
10 untapped sources of talent that we have a challenge to try to
11 bring forward.

12 So the three points I want to make are about, first, the
13 particular moment, how we place that in the patent system's long
14 history and commitment to advancing innovators and not just
15 innovation. And I just wanted to place that into context because
16 this moment, I think, is part of a longer conversation that will
17 continue that has been about this topic and about the democracy --
18 democratization of innovation that is particular to the U.S.
19 patent system.

20 The second point I want to make is about the PTO's
21 particular comparative advantage as an aggregator of information
22 about innovators that has really come to the fore. The study that

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1 was cited earlier by Raj Teddy (ph) is extremely influential,
2 what's going on patent data. There have been numerous studies of
3 innovators that have begun using patent data and it's to the PTO's
4 credit that they have done work to make this data available but
5 even more could be done to collect and disseminate and federate
6 data about not only demographic traits but socioeconomic traits,
7 and really, I don't think there are other agencies or institutions
8 that can do as good a job, so that puts more pressure on the PTO
9 to continue to try to improve what we know and what we don't know
10 to try to fill the gaps on what we don't know about the trades of
11 inventors.

12 I'd also call on the PTO to do what only it can do,
13 which is to experiment and test for implicit bias as has been
14 suggested in the literature a little bit.

15 And, finally, I'd want to call upon companies that may
16 be here or involved in this conversation to work with the PTO, as
17 it's called by the SUCCESS Act, to uncover practices that work,
18 that can actually increase inclusion and diversity by supporting
19 survey work and research and try to think about how the regional
20 offices contribute to that, so I'll talk a little bit about that.

21 So I'll provide brief testimony separately, so I won't
22 go through all the different sources, but if the PTO has specific

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1 questions or others come up, the comments here below -- comments
2 that I'm going to mention draw from several research projects.
3 Again, as I mentioned, a multi-year project on the use of patent
4 data to advance innovators, and in that work, I have looked at
5 patent data but also innovation data in publications and LinkedIn
6 and other databases, and so I can speak to the comparative
7 strengths and weaknesses of patent data relative to these.

8 Another project is on rigorous policy highlights,
9 article of the same name that's forthcoming in the Iowa Law
10 Review, and it talks about this kind of process of iterative
11 experimentation and evaluation by government agencies, including
12 the use as PTO to deploy, develop and test and continuously
13 approve policy and prevention. So, again, some of the things I
14 want to talk about involve iteration and going back and forth and
15 just as we're here in Silicon Valley where agile product
16 development is widely used, you know, on a frequent basis, I think
17 we can employ those same tactics to develop the policies that
18 we're going to apply for at this very important set of issues.

19 So I first want to go to my first point around the use
20 of the patent system to advance innovators because we typically
21 think of the purpose of the patent system, if we go back to the
22 Constitution, is really to promote the progress of science in the

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1 useful arts, but I would also -- it put before that it's been
2 fundamental to our U.S. patent system that we think about
3 having -- advancing innovators -- think about advancing innovators
4 as part of that.

5 So if you look back in the history, to the early patent
6 system, there were many distinctive features that were meant to
7 encourage participation and inclusion in inventing. So unlike the
8 British system, we had a system that was based on merits and on
9 patronage, the ability to accept applicants by mail, and so it
10 wasn't -- you didn't have to actually go to the office and have
11 that relationship. We also had low fees.

12 So these were all features that we're going towards at
13 the very foundation of the system, the ability to include low
14 income, rural inventors, inventors with good ideas, not only good
15 connections. Decades later, we have had this commitment to
16 inclusive inventing come through as Congress has introduced fees
17 for small and non-profit and individual inventors, and then in
18 2011, with the America Invents Act, introduced the micro entity
19 inventor status level, and at even lower rate and creating
20 regional offices for -- in Detroit, Dallas, Denver, and here to
21 offer services to make sure they weren't just on the coast but
22 disseminated around the country.

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1 So I believe, you know, the work that's being done here
2 is very important, and if there are interventions that are
3 working, I believe, Congress is going to be very receptive and
4 interested in what they're about.

5 So I wanted to just provide that backdrop to place
6 today's SUCCESS Act hearings as this ongoing partnership and
7 thinking about how to close the gap.

8 So this brings me to the second question of, well, how
9 can USPTO in particular play a role and what has been its role
10 historically. Here, I want to point to you the important and
11 comparative advantage the USPTO has as aggregating information,
12 and that means collecting and disseminating and federating
13 information. And I want to commend the Office of Chief Economist
14 in particular for its efforts thus far as applying a rich and
15 detailed view of innovators of that patent.

16 So when you look at a patent, though, you have not only
17 the information about technology that's inside the patent but on
18 the front page, many, many details about the setting of the
19 patent, where it was created. When you go into the patent record
20 and look at the fees that were paid, you can see what the entity
21 status is of the assignee, you can look at the setting. And so,
22 with this, you have a lot of rich information about innovators,

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1 not just about innovation.

2 But for many years about this data, although it was
3 being collected, has been locked up because it was dirty. It
4 wasn't able to be accessed electronically. Also, you have people
5 using different names when they sign up for patents, and so that
6 hasn't been allowed for comparisons across time.

7 But thanks to the work of the chief economist as well as
8 in a set funding, there has been a lot of work to put that
9 together, and that gives the patent data just a level of richness
10 that is not available when you're thinking about survey data,
11 which is some sort of episodic and ask different sets of
12 questions. When you think about publication data, new product
13 data, all of these different sets are generally in different types
14 of silos of information, different forums. They're not uniformly
15 reported in the same way that patents are, and this provides a lot
16 of richness that is not available in other ways.

17 But this also puts a greater burden on the PTO to make
18 sure that the information that is provided is accurate, and also,
19 I think, can be connected to other types of information, just not
20 on innovation, because when people talk about patent, they say,
21 Well, the problem with that is that most innovation is not
22 patented, it doesn't capture a lot of information that's out

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1 there, and it's also not connected to commercial activity
2 necessarily. You can apply for a patent, do nothing with it, or
3 you can apply for a patent and it could become disseminated
4 widely, and both are reflected in the same way in the patent
5 system.

6 So I think the patent office should continue to think
7 about how to situate its information, make it leveraged more
8 broadly by, for example, trying to encourage people to draw ties
9 between patent data and other data, to understand what kind of
10 discount rate or what kind of way can we think about patent data
11 in context.

12 And then also to think about how we can overcome certain
13 deficiencies that we think are still there and prevent the full
14 use of the patent data.

15 So I want to talk about, first, entity-size data. We
16 talked earlier in this hearing already for comments made about
17 socioeconomic status, and right now, the PTO does have little
18 silos of information, but they're not put together, they're not
19 available, and so this entity-size data that could be a rich
20 source is, per the report, is not consistently available, and I
21 don't think, as a result, it's being used as widely as it could
22 be.

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1 So right now, you have different-sized entities: Micro,
2 small, and large. That information exists in the maintenance fee
3 and the patent office has put that -- made that available through
4 Patent View but it's not easily available. It's not consistently
5 available. I have tried to use it many times. It's not
6 necessarily there in the applications data. There was not a
7 single snapshot that's easy to access.

8 So I encourage the Patent View field of entity data to
9 be made available and also made available over time so that it can
10 be traced.

11 A small entity category also includes the smallest
12 inventors to the largest universities, so you have, unfortunately,
13 in that entity a tag -- some noisiness, so I was encourage, again,
14 the PTO to take some of the other data that's collected on whether
15 the data came out of a company or came out of a non-profit or a
16 government. And I know that work has been done before by the PTO
17 in terms of collecting entity type. I encourage that data to be
18 made of high quality. I have seen that there are some
19 inconsistencies in it but also federated within the data so we can
20 actually get a full picture of what -- who exactly is patenting
21 where.

22 And there are independent researcher efforts to do that

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1 type federation, but if the PTO does it, it's a lot more
2 accessible, it's widely available to everybody who wants to do the
3 work, not just the researchers who have the most resources, who
4 may or may not share the information and would encourage that to
5 be collected in a more uniform and meaningful way.

6 Here, also, it's really encouraging to see the SBA work
7 with the PTO because the SBA has a lot of rich information and
8 other data available around, you know, the demography of the
9 actual entity itself, if it's a business -- minority-owned
10 business or what its income or revenue might be.

11 And so I would encourage -- I know that there has been
12 efforts behind-the-scenes in the office of each economist to have
13 PTO data sort of connected with NET's (ph) data and other data,
14 and I would encourage -- I think researchers are very interested,
15 I think, in looking at that data and would encourage the PTO to
16 look at arrangements made by the census or other groups to create
17 data-sharing agreements with researchers so that they can get
18 access to information and they can see their questions and see if
19 there are ways that there can be collaboration.

20 I think the addition of gender data is extremely
21 helpful. I'm really happy to see the PTO not only making the
22 report but then also immediately making the data available to the

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1 federated and to the assignee database. It allows for some of
2 this tracking that was carried out -- Project Conclude was
3 referred to earlier, I believe.

4 But this could also be improved because the foreign
5 names are often not profiled in a way that -- with a high level of
6 confidence. And so, here, what I found useful in my own efforts
7 to try to profile better names and match it to gender more
8 conclusively is to actually use the native language and to go back
9 to the patent filing that is in the home country and is filed in
10 the native language. And so I have been able to overcome some of
11 these challenges by having native readers read native names. And
12 so if that were possible in the ADS to actually report names, not
13 in an Anglicized name but actually in, you know, Chinese or in
14 Arabic or some other language that is the home language, that
15 could improve the data that we capture, and therefore, the
16 inferences that can be made.

17 Race data is extremely challenging, especially with
18 respect to particularly African-American and White names, so, you
19 know, I think that we need more effort needs to be done to try to
20 think about this, in Lisa Coke's (ph) work, in creating databases
21 of African-American inventors and others, I think, can be brought
22 to bear. There have been independent research efforts. So I

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1 think the PTO can -- has a great convening power in bringing
2 together some of these efforts and putting that and making that
3 available in the record.

4 I know my time is almost over, so I'm going to just take
5 another minute or two to mention that I think there are certain
6 things that the patent office can do that the private sector
7 cannot. One is around testing for implicit bias in patenting, and
8 this perception of reality that there is a lower grant rate to
9 women, which might be explainable by different factors, but the
10 work by Jensen and others from Yale has suggested this is this
11 gap, and the PTO has done efforts to try to understand how much of
12 that is due to external factors due to where the, you know, filing
13 in certain classes which have a lower grant rate, etc.

14 But I think, at the end of the day, the patent office is
15 in a much better position than the private sector to try to really
16 get at the bottom of this. And the way I would suggest that it do
17 so is by using a blind study, a randomized control trial. And I
18 just, last Wednesday, held a -- or Thursday -- held a workshop
19 with federal agencies across the government that were involved and
20 engaged in rigorous piloting and doing randomized experiments.

21 So I would encourage -- even though it seems like a
22 strange thing to do -- the idea of having a single application

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1 with two different names on it and seeing if there's a difference
2 in treatment would be an important first step and low cost
3 relative to other interventions with higher-quality data to get at
4 this issue of implicit bias. I'm happy to talk more about that.

5 The final thing I want to say is that there are areas of
6 success in innovators that are participating, in companies who
7 achieved a higher rate in sectors. You talked about companies
8 that are at the top. They're really calling on the PTO to work
9 with those stakeholders to ask them what has contributed to their
10 success. Again, you have a different convening power of bringing
11 them together and asking them to share information, which
12 otherwise might be seen as something they want to keep proprietary
13 or something that they, themselves -- you know, it's working for
14 them individually, but they don't understand what the value to
15 them would be of sharing that more broadly.

16 But we do have this, I think, shared interest, and I
17 think just having -- calling upon companies to share information,
18 participate in research, I think, could go a long way. Thank you
19 very much.

20 MR. CABECA: Thank you, Colleen.

21 Okay. So, amazingly, we are ahead of the schedule. But
22 since all of our other testimony is scheduled, we have an extra 15

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1 minutes. So I thought I would offer, because the other
2 unscheduled public testimony, the open floor, is scheduled for
3 later this afternoon, I thought I would take this extra 12 minutes
4 that we have to see if there is anyone that is not currently
5 scheduled on the agenda that would like to provide any remarks.
6 Otherwise, we'll have a little bit longer of a break.

7 So if there's anyone that would like to provide open
8 floor unscheduled testimony, come up to the -- yes, thank you.
9 And please recognize yourself for our court reporter into the
10 microphone. Thank you very much. And 12 minutes or so.

11 MS. WESLEY: Kimberly Wesley. I'm a registered nurse at
12 Valley Nurses Association, and I have a patent pending for a
13 chemical composition that would be utilized as a sleep aid. I did
14 benefit from the micro entity program that was. That was
15 excellent. But one recommendation I might make is that support
16 and access to laboratory equipment, we have Stanford and Berkeley
17 and a lot of universities in the Bay Area, but small inventors
18 like myself, we don't have access to those laboratories and that
19 support and those resources.

20 So if the Government could develop an incubation
21 laboratory on the level of Stanford or Berkeley, it would be good
22 for us independent inventors. So that's all I had to say.

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1 MR. CABECA: All right. Thank you very much.

2 Okay. With that, let's go ahead and take our break.

3 We'll convene back here about five minutes to 11 if that's okay,
4 10:55. Thank you. And, again, if you need to use the restroom,
5 please see a guard for a pass so you can get back in. We'll
6 reconvene at 10:55.

7 (A brief recess was taken.)

8 MR. CABECA: Okay. Returning from our break, thank you,
9 everybody. It's my pleasure to introduce our next presenter and
10 to provide his testimony and -- so we have four speakers coming up
11 over the next hour, and then we will break for lunch for an hour.
12 Lunch is, unfortunately, not being provided but there's a lot of
13 places nearby. Also, if you would like to grab your lunch and
14 come back, you know, we have room in the lobby, and then there's
15 also a little conference room where we can sit around and
16 informally speak during lunch. So, again, it's on your own, but
17 you would like to bring it back here, we welcome that as well.

18 Okay. Moving on to our next testimony, Sheng Tai "Ted"
19 Tsao will -- he's the president of STT WebOS, Incorporated, and
20 will be providing his remarks. Thank you.

21 MR. TSAO: Thank you, everyone. I'm Sheng Tai Tsao; you
22 can call me Ted. I'm a Chinese minority, U.S. citizen. I have a

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1 master degree in computer science from Cal Poly at Pomona in 1988.
2 Since -- from 1988 to 2002, I worked as software engineer in
3 Silicon Valley for many -- several high-tech company, and so my
4 story is, since March 2002, I have funded in my own start-up
5 company called STT WebOS, Inc., and also in this year, I have
6 solved, you know, web browser blocking problem, so that actually
7 achieved the web multitasking.

8 So, in August, I had filed first patent application for
9 the -- this technology. Starting from 2008, I have received that
10 numerous patent for this technology, along with the other patents
11 for other technology. And of course STT would like to license the
12 advanced technology, so this journey is a study from 2002.
13 November 2002, I have sent several letters to multiple high, you
14 know, tech giants and introduces web multitasking technology.

15 And so SBA for looking for partnership or investment or
16 licensing opportunity, and on December, I fortunately got response
17 from first tech giants, and so -- but the response investigates
18 finally reject, you know, that kind of intention -- good
19 intention.

20 Now, I still feel warm about it because at least I got a
21 response, while other tech giants even never bother to response.
22 So, from 2005, that's the first several years, Silicon Valley

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1 companies studied the -- called Ejects (ph) technology
2 (indiscernible). So then, in 2008, I just -- you know, sent an
3 email to the first tech giants telling them, say, okay, look,
4 yeah, this is Ejects system, major issue is solved with, you know,
5 web multitasking problem -- I mean, solving the web browser
6 blocking problem. Web blocking means, when you interact with your
7 web browser, no response. You (indiscernible) create no response,
8 and you have to wait. After a while, then response.

9 And I tell them, they said since, you know, they try to,
10 you know, give me a warm response, introduce some internal staff,
11 and actually, they are still no way to move to that licensing
12 board in a good intention even without purchasing. Right?

13 So nothing each -- you know, so what are we planning to
14 do. Now, from 2015, an attorney who attend the STT for licensing
15 activity, this time, you know, we captured many chem giant. Same
16 because they said chem giant to first -- for first tech giants in
17 U.S. and China. And so this chem giant also send it to the first
18 tech giants. Yeah.

19 Now, in 2016, after one year long discussing and a
20 challenging conversations a meeting, there are second tech giants
21 in Silicon Valley, finally, you know, license our technology.
22 That's about more than 40 patents in different area, including the

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1 web and multitasking. And this is the first one and there's the
2 only one licensing (indiscernible) since 2002.

3 So, in 2016, of course other multiple tech giants, first
4 in China and in the U.S., including the first tech giants to study
5 the serious conversation with attorney. And, unfortunately, in
6 September 2017, four patents, among more than 40 patents, have
7 been embedded in the case by district court on a (indiscernible) B
8 6. And that means without claim construction, they got a quick,
9 invalidate.

10 So after that invalidation, all tech giants, you know,
11 they are all suddenly started a conversation with the attorney.
12 So since -- in 2002 and in 2018, STT came out January any revenue
13 from, you know, licensing.

14 So up to this point, STT still working hard to try to
15 licensing its -- you know, the advance of technology and also
16 wondering when the first tech giants would take step toward
17 licensing. And we are not looking for skyrocket, you know, in any
18 for licensing fee. It's very modern. It's -- even, you know,
19 penniless, you know, price for putting license, you know, use of
20 contact. This is like a fraction of a penny. You know, I don't
21 know. If they are sued, the tech giants where the licensing our
22 technology.

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1 So my question is -- first question is, can the four
2 patent be recovered from session first invalidation because, since
3 the 2018, federal circuit has issued that multiple and new case
4 law for preventing first invalidating the patents. Also PTO has a
5 new guideline for examining for the patent invalidation, so -- and
6 this is new case law and the new guideline, you know, the four --
7 the four patents can never be unvalidated.

8 So the second question is why is long established
9 innovative technology, such as web multitasking, from a small
10 inventor or individual inventor has extreme -- tough time for
11 licensing to tech giants? Now, the question is: Can our
12 legislation, our judicial system, or PTO help small inventor or
13 individual inventor to licensing their patented technology for
14 much easily to the tech giants. Yes, that's all I wish to say.

15 MR. CABECA: Thank you.

16 MS. MYERS: Britten Sessions from Lincoln Law School of
17 San Jose, associate dean of intellectual property and director and
18 founder of an intellectual property clinic.

19 MR. SESSIONS: Thank you very much for the opportunity
20 to testify today in relation to the SUCCESS Act. Director Iancu
21 indicated in, I believe about one year ago, that our patent system
22 is at a crossroads, and I agree very much with this statement.

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1 This is a question, I think, hypothetically we could pose
2 ourselves as a nation, as a patent market, continue our legacy of
3 building upon fundamental patent rights or, on the other hand,
4 will we potentially remove such rights for Patent Owners?

5 The SUCCESS Act fits squarely into this focus of
6 ensuring that we are continuing to build upon such patent rights
7 by evaluating whether individuals and entities, with a particular
8 emphasis on women, veterans, and minorities -- have effective
9 access to the patent system. This emphasis, effective access to
10 the patent system, is also in alignment with many other USPTO
11 initiatives, including the pro bono patent program, as well as the
12 law school clinic certification program.

13 Both programs were introduced roughly in the 2008 time
14 frame. Both take a distinct and different approach to answering
15 the essential question how can they do as PTO says with providing
16 greater resources to those who would otherwise be financially
17 estopped from receiving such services.

18 The pro bono patent program is a nationwide network of
19 independently operated academic and non-profit organizations. The
20 endeavor to match volunteer patent practitioners with financially
21 underresourced inventors seeking patent protection.

22 Additionally, my clinic, which is part of the law school

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1 of clinic certification program, train students who, in turn,
2 provide the patent services under the guidance, mentoring, and
3 ultimately approval of a licensed practitioner to those in our
4 community for free. The legal services have no legal cost.

5 It is a literal win-win situation where the students can
6 get experience while they are students, and the community benefits
7 from having high-quality patent services without any legal
8 expense. Over the years, it has been my experience of what the
9 SUCCESS Act is presently evaluating coincides with the types of
10 two-fold and entities -- namely, women, minorities, and
11 veterans -- that come to such USPTO-approved clinics. It is
12 precisely, therefore, at this perspective; namely, my dealings and
13 representations of and interactions with these types of inventors
14 that I feel compelled to speak on behalf of today.

15 I have segmented my remarks into two main categories.
16 First, indications of success, and two, actual feedback from
17 inventors, including potential avenues for further development.
18 First, with respect to indications of success, the initiatives put
19 forth by the USPTO, I believe, are assisting with improving
20 effective access to the patent system. For example, with respect
21 to the pro bono program, during the first three-quarters of fiscal
22 year 2018, the program actually assisted underresourced inventors

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1 and small businesses with filing 205 patent applications and
2 actually fielded 1,757 public inquiries and matched 432
3 underresourced inventors with qualified patent practitioners.

4 Additionally, with respect to the clinic program, over
5 875 patent applications have been filed since the beginning of the
6 program, and for fiscal years 2017 and '18, there were over 4,100
7 clients engaged by clinics in the program. Therefore, clearly,
8 the numbers alone speak for themselves. These initiatives are
9 providing services to those who would generally not otherwise
10 receive these types of services.

11 In short, when I look over the impact that my level of
12 clinic alone has provided, I'm not only encouraged by the number
13 of results alone but also by the ways in which these inventors
14 have literally been granted effective access to the patent system.
15 Suffice it to say that the many thank-you notes my clinic has
16 received all indicate a similar theme. First, an immense
17 appreciation for the services we have provided, and secondly,
18 relief that they finally found a financially viable channel to the
19 patent system.

20 All of this, in my mind, shows the success of these
21 initiatives in that women, veterans, and minorities are being
22 granted more effective access to the patent system than before.

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1 However, the universal adage that all things can be improved, I
2 believe, applies to even our currently improving patent system as
3 well, which leads me to my second category and that is actual
4 feedback from inventors and avenues for development.

5 Rather than solely speak for inventors, I wanted to give
6 many of these inventors a chance to speak for themselves, and to
7 that end, at a recent inventor conference, I interviewed them,
8 including some of my own clients from the clinic, asking them what
9 issues they are facing in today's patent market. Their frank
10 responses have concluded, professed on the best instruction on the
11 issue these inventors face in today's patent market. I have
12 organized their lengthy input all leading to a few categories
13 followed by my recommendations on how to potentially resolve these
14 issues.

15 Category No. 1: My patents can easily die. And this is
16 a thing that we have heard from even a number of people today.
17 Quote 1, "There is a risk in working with a large company. If one
18 goes and presents intellectual property to them, the company may
19 look at it in a different way. For example, they may consider
20 simply going ahead and infringing the rights and then appealing it
21 to the PTAB, which has a high chance of invalidating the patent."

22 Second quote: "Due to how easy patent invalidation has

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1 become, companies do not feel a need to license. Instead of
2 licensing it and being more economical to infringe and invalidate
3 the patent."

4 It is startling to me to receive repeated feedback from
5 many inventors that companies blatantly will disregard patent
6 rights because, quote, "It is cheaper to kill a patent than it is
7 to license one."

8 If Patent Owners cannot rely on a granted patent
9 protection as a basis for a protection and if the risk for
10 invalidation is high, then this causes the inventors to wonder why
11 they went through the time and expense to even get a patent in the
12 first place, which leads me to my first recommendation, which is
13 to provide greater stability for 101. Again, it's a recurrent
14 theme here today.

15 The past seven years, I think, at a minimum, has taught
16 us that many are a bit confused on how to deal with or even rule
17 on 101 issues in patents. The Supreme Court in the Alice decision
18 left open much of the implementation of 101 construction to the
19 courts, which subsequently created a fragmented landscape with
20 often conflicting opinions.

21 The USPTO has repeatedly recognized this issue and
22 sought to provide greater consistency of analysis relating to 101

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1 by issuing several guidelines. They even appointed individuals to
2 eliminate inconsistencies in the interpretation and implementation
3 of the Alice test among different branches of the USPTO. This is
4 very much a monumental task and one that, in my opinion, deserves
5 some of our greatest attention. I applaud the USPTO for their
6 attempts to rectify this issue. However, USPTO guidance and
7 policies do not extend to other courts nor are the USPTO's recent
8 guidelines a permanent fix. For example, the next director may
9 modify the burn (ph) guidelines.

10 Thus, in order to effect a lasting change and not just
11 at the USPTO level but nationwide, in each PTAB hearing and
12 federal court, Congress needs to come together to more fully
13 implement rules that bring stability to a very volatile subject.
14 I acknowledge that Congress currently has a number of proposals,
15 and even in both the House and the Senate, relating to patent
16 reform. Narrowly, all of these proposals includes some provisions
17 relating to subject matter eligibility. At a minimum, we need to
18 know everything so that Congress recognizes the importance of
19 stability for patent subject matter eligibility and implements
20 policies that allow courts to act in a consistent manner.

21 Category No. 2: "I can't find financial backing to
22 assert my rights." First quote, "If you do not have millions of

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1 dollars at your disposal, you will need a contingency attorney or
2 investors, both of which are now in short supply. Without these
3 resources, patent holders are defenseless and incapable of
4 licensing."

5 Second quote: "The effects of the PTAB analysis
6 decision made me unable to defend my patent rights and caused my
7 investors to leave." The risk of the patent market has caused
8 contingency arrangements, which was the primary manner in which
9 inventors historically had effective access to the courts, to
10 vanish. Litigation is expensive, and without a financial way to
11 represent these smaller entity inventors, including women,
12 veterans, and minorities, they are effectively prevented from
13 being able to assert their rights.

14 Further, the increased risk has caused inventors to
15 close their pockets, which leads me to my recommendation No. 2:
16 Reduce the risk. Now, to simply indicate to reduce the risk is an
17 easy conclusion to say but rather hard to implement. For example,
18 one of the main goals of them are the America Invents Act and
19 subsequent court direction for them was to eliminate trolls and
20 bad patents. I believe all in the patent marketplace would agree
21 that assertions without merit and bad patents should be removed.

22 However, as Director Iancu recently indicated, "In our

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1 zeal to eliminate trolls and the bad patents, we have
2 overcorrected and risked throwing out the baby with the bath
3 water."

4 Bringing balance to our system must include some way for
5 Patent Owners to have a financially viable option to assert their
6 rights, both with respect to contingency options and funders. I
7 agree with Director Iancu, who indicated, "Let's work together to
8 find narrowly tailored measures to eliminate only the faults in
9 the system while promoting the vast amounts of amazing innovation
10 America is capable of."

11 So what narrow measures can we consider? I have a few
12 here. First, we can support Congress in bringing greater clarity
13 to subject matter eligibility, as I have indicated. We can grant
14 the USPTO greater autonomy of the money it collects. We can
15 restore injunctive relief. Patent rights allow for a right to
16 exclude, and yet, under the current standards set forth by eBay,
17 the right to exclude is greatly restricted.

18 We can minimize multiple proceedings or serial filings
19 to dispute the validity of a patent. Large corporations can
20 weather -- can finance multiple proceedings; inventors, including
21 women, veterans, minorities, often simply cannot. We can deter
22 efficient infringers, which is a new term here in Silicon Valley,

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1 which actually, I think, came from New York, which may those who
2 prefer to purposely infringe a patent and dispute its validity
3 rather than to have a license by enforcing -- and we can deter
4 this by enforcing willful infringement provisions or, as some have
5 even hypothesized, levy criminal sanctions similar to other forms
6 of IP, particularly in relation to trademark and copyright
7 penalties.

8 We can assure that PTAB judges are properly appointed
9 per the appointments clause of the Constitution and that they
10 comply with the judicial rules or codes of conduct consistent with
11 other federal court judges to rule on patent-related issues.

12 Category 3: Should I simply pursue protection outside
13 of the U.S.? Quote, "I am considering no longer patenting in the
14 U.S. I can get better protection in China. As a veteran, I do
15 not want to move my creations elsewhere but feel that, in view of
16 the current market conditions, I do not have any choice."

17 Inventors feel that foreign jurisdictions currently
18 offer more stability for asserting patent rights than what the
19 U.S. provides. This is also consistent with the fact that
20 investors generally are pushing dollars to other jurisdictions to
21 pursue Patent Owner protection and assertions, which leads me to
22 my last recommendation and that is, let us learn from history.

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1 The Diamond versus Chakrabarty case, for example, allow
2 for a living subject matter to be patent eligible. As a direct
3 result, the U.S. became woefully dominant in the biotech industry
4 for more than a generation. Currently, the U.S. has fallen behind
5 on many other up-and-coming industries. For example, China is
6 leading with respect to artificial intelligence investment.
7 Investors follow the money, innovation follows the investors, and
8 economic growth follows the innovation. As such, having a census
9 in place consistent with the measures I have previously indicated
10 will ensure that the U.S. remains on the forefront of economic
11 growth, innovation, and investment.

12 Now, to conclude, we, indeed, do stand at crossroads. I
13 stand with Director Iancu again who stated, "Born of the
14 Constitution as steeped in our glorious history, the American
15 patent system is a crown jewel: A gold standard." Let's take
16 action now to ensure that inventors -- and particularly women,
17 veterans, and minorities -- have not only effective access getting
18 the patent but also effective access to the courts in enforcing
19 their rights as well. Thank you.

20 MR. CABECA: Okay. Next -- thank you. Next, I'd like
21 to call up to the podium Professor Robin Feldman, who is at the
22 University of California Hastings College of the Law.

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1 PROFESSOR FELDMAN: Director Cabeca, Director Clowes,
2 Deputy Myers, and other distinguished members of the USPTO, I'm
3 honored to be here today to address an important issue:
4 Maximizing our nation's innovative potential by turning our
5 attention to women founders and inventors.

6 I'm Robin Feldman, the Arthur J. Goldberg distinguished
7 professor of law and director of the Center for Innovation at the
8 University of California, Hastings Law. At the Center for
9 Innovation, I'm privileged to lead 12 team members who engage in
10 research on issues related to science and technology. We also
11 engage in programming that provides on-the-ground support for
12 innovators, our flagship program, the Start-up Legal Garage,
13 provides free legal services to roughly 50 early-stage technology
14 and life science companies every year, and our focus is on women
15 and minorities.

16 The work is supervised entirely for free by outside
17 lawyers, and I do mean entirely for free. We do not allow
18 deferred compensation or any other payment mechanism. It's a
19 system that we've guarded fiercely for a very long time.

20 In addition to Start-up Legal Garage, the center has now
21 launched Lex Lab, which includes an accelerator for legal tech
22 start-ups. In short, our team at the Center for Innovation has

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1 the opportunity to see entrepreneurship both from an academic
2 research perspective and on the ground.

3 So, today, I would like to talk to you about both the
4 successes and the challenges for women in technology, invention,
5 and entrepreneurship. In recent years, women's involvement in
6 entrepreneurial activities has sky-rocketed, providing a
7 significant increase in opportunities for female leaders. Women
8 entrepreneurs not only diversify the innovation space, they also
9 generate new ideas, inventions, businesses that would not have
10 existed otherwise. So between 2017 and 2018 alone, women created
11 more than 1500 net new businesses every day. Over the past
12 decade, the number of women-owned firms increased by 58 percent,
13 far outpacing the national percentage growth of 12 percent. And
14 furthermore, recent studies have even found that women-founded
15 businesses bring in more revenue, are more innovative, and are
16 more sustainable than those without women.

17 Research suggests, however, that women inventors and
18 their potential remains highly underutilized. For example, even
19 though women are catalyzing growth in entrepreneurial sectors,
20 they're still underrepresented and underfunded in the start-up and
21 tech industries. Every year, from 2012 to 2017, only 17 percent
22 of inventor-backed start-ups were women founded, stagnating over

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1 the last five-year period. In other words, we're not moving
2 forward. We're staying right where we were.

3 So consider technology leaders such as Google, Facebook,
4 despite considerable efforts to increase diversity at Google,
5 women still make up less than a third of its employees and only
6 about a quarter of its leaders. Moreover, the roles that women
7 play in technology companies may leave them more on the periphery
8 and less in positions perceived as being at the core of the
9 company's power, and that is a problem.

10 At Facebook, in 2018, for example, women occupied just
11 22 percent of technical roles and 30 percent of the senior
12 leadership roles. And across several major tech companies, women
13 occupy similarly low percentages of technology in leadership
14 positions, often facing discrimination along the way.

15 Now, the patent system can be central for changing this
16 landscape. In our spectacular and valued patent system, the power
17 of invention and inventorship confers strength both in terms of
18 signally technological jobs and in terms of conveying bargaining
19 power.

20 Ensure that women have access to those avenues of
21 strength is an important part of securing the science and
22 technology pathway for women, along with the economic benefits for

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1 society for all of us as a whole, and thus, it is critical that
2 women gain exposure and access to the patent system and that we
3 eliminate barriers along the way.

4 In the entrepreneurial space, I have to say the numbers
5 are not encouraging. Women continue to struggle to obtain funding
6 for their businesses, particularly in the start-up environment.
7 Last year, female-founded start-ups received \$1.9 billion in
8 venture capital. That was wonderful to see, but that funding is
9 out of a total of 85 billion overall, a mere 2.2 percent of all VC
10 dollars. In contrast, all-male teams secure roughly 79 percent of
11 the VC dollars.

12 And a study by the National Women's Business Council
13 found that, among the founders of the most successful companies,
14 women were able to launch their start-ups using -- I'm sorry, men
15 were able to their start-ups using six times as much capital as
16 women. That's a tough place to start from.

17 And, in 2017, women accounted for only 8 percent of the
18 investing partners in the top 100 venture firms. These early
19 struggles in funding discrepancies pulls long-term challenges for
20 the economic stability of female founders and their ventures, and
21 we know from research that the ability to have patents plays an
22 important role in this process.

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1 Consequently, any legislative policy that seeks to
2 remedy these inequities must be crafted with a thorough
3 understanding of women founders and business leaders, their
4 funding and revenue streams, and quite frankly, their networks.
5 As the USPTO profile of limited ventures progress and potential
6 notes, women accounted for only 12 percent of all inventors who
7 secured patents in 2016.

8 Questions surrounding women in inventorship per se are
9 understudied. Nevertheless, there are tantalizing hints of
10 leakage in the pipeline; that is, ways in which women we would
11 expect to see in the invention space seem to be left out or left
12 behind, and that is where I believe we have the most potential to
13 make a difference.

14 On the simplest level, how can women inventors build and
15 lead teams to support their innovations if they are faced with
16 significant challenges in securing patents for those inventions in
17 the first place? And beyond that, if we want women to have the
18 opportunity to climb the soaring heights of Silicon Valley where
19 we now sit, the foundation must be strong, and the patent system
20 is key to that foundation.

21 Now, the SUCCESS Act acknowledges the extraordinary
22 potential of women inventors and the processes it has set in

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1 motion, hopefully, will be instrumental in encouraging women to
2 apply for patents and in fostering their entrepreneurial growth.
3 In particular, what I find so hopeful about the SUCCESS Act is
4 that it provides an opportunity not only to highlight key factors
5 that help women entrepreneurs succeed; it also allows us to shine
6 light on the roadblocks that currently hinder their creative
7 efforts.

8 I want to take a moment to be completely candid with
9 you-all. I have been troubled of late by what I perceive as
10 fatigue on the topic of women, technology, and entrepreneurship.
11 The sense I get is something like the following: We all know
12 there's a problem, it's not clear anything will make a difference,
13 why should we keep looking at this? We have heard it before.

14 As an academic, I continue to believe that we haven't
15 found a solution. Perhaps we don't understand the problem fully
16 as we think we do, and perhaps we haven't looked in the right
17 places.

18 So let me share with you a study we are attempting to
19 undertake along these lines. The University of California
20 Hastings Center for Innovation has access to a dataset of more
21 than 750 start-ups. The dataset consists of start-ups founded by
22 those who are university affiliates, including graduate students,

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1 post docs, faculty, and others who have licensed technologies from
2 their home campuses. We are fortunate that it is a wonderfully
3 robust dataset with information, including industry, revenue,
4 venture funding status, numerous other characteristics. It also
5 has the advantages of coming from campuses that vary in size,
6 resource levels, and location, and we have already sorted for
7 gender information.

8 Now, universities are a particularly important part of
9 the innovation pipeline because it's there that future science and
10 technology innovators find their training, develop mentorship, and
11 more importantly, begin to create the networks that will support
12 them down the road and that we are beginning to understand are so
13 critical. Our hope is to use this extraordinary dataset not just
14 to look at where women are not adequately represented along the
15 way but to see what has worked for women so that we can try to
16 expand and replicate.

17 And although we can learn much from mining the data
18 itself, we also hope to look in depth at the experiences of the
19 women and the sample, including their experiences with patenting
20 and in invention. My own experience in looking for support for
21 this endeavor reflects what I described before as fatigue on the
22 topic of women in technology and entrepreneurship. And I will

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1 tell you that, having been privileged to receive tremendously
2 generous support for projects in a wide range of areas, from
3 privacy to patent licensing to healthcare innovation, it is
4 striking to me that, while Silicon Valley speaks about issues
5 related to women in technology and entrepreneurship, it can be
6 remarkably challenging to inspire their support.

7 I am hopeful that the SUCCESS Act will help reenergize
8 this area, encouraging Silicon Valley to keep looking and keep
9 striving for answers and solutions. Thank you very much for
10 allowing me to speak today.

11 MS. MYERS: Thank you. Now, I'd like to call Hattie
12 Carwell up to the podium. Ms. Carwell is from the Coalition of
13 Hispanic Advocate and Native Americans for the Next Generation of
14 Scientists and Engineers, CHANGES.

15 MS. CARWELL: Good morning, everyone. My name is Hattie
16 Carwell, and I am here to provide testimony that identifies a
17 social economic benefit of the SUCCESS Act and to provide concrete
18 ideas to increase the participation of women, the veterans, and
19 minorities in particular in applying and receipt of patents.
20 Thank you for this opportunity to testify.

21 I heard about this event just a few days ago, and
22 basically, as a result of the dedicated USPTO employee colleague.

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1 I am president and co-founder of the Coalition of Hispanic,
2 African, and Native Americans for the Next Generation of Engineers
3 and Scientists, CHANGES. Also, I am the executive director of the
4 Museum of African-American Technology, MAAT Science Village in
5 Oakland. I am a health physicist by professional training and
6 have worked nationally and internationally for the U.S. Department
7 of Energy and the International Atomic Energy Commission. In 2010
8 to 2011, I served as president of a National Technical Association
9 founded in 1926.

10 The vision of CHANGES is to bring to bear the collective
11 influence of Hispanics, African, and American Indians in STEM and
12 architecture, to broaden participation of minorities in STEM and
13 also architecture, especially by encouraging students in technical
14 excellence, fostering workforce development and inclusion, and
15 developing policies and programs that promote workforce diversity
16 in science and engineering.

17 CHANGES is a coalition of 15 minority technical,
18 professional organizations, and its goals are twofold: To elevate
19 the national visibility and influence of the member organizations
20 in the development of STEM research policy and educational
21 programs; two, to strengthen our member organization's programs
22 and finances in support of the next generation of engineers and

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1 scientists and architects.

2 The mission of MAAT Science Village, which I also
3 founded, is to make available to the public information about the
4 technical contributions of African-American engineers and
5 scientists. The museum endeavors to make the public aware of the
6 African-American ingenuity and its impact on the economic
7 development of the United States. It conducts minority youth
8 programs to encourage them to prepare for careers in the STEM
9 workforce.

10 Both CHANGES and MAAT Science Village are not strangers
11 to the USPTO. For ten years, I served on the selection committee,
12 which decides on the induction of inventors into the Inventors
13 Hall of Fame. The USPTO in Alexandria, Virginia, is a major
14 sponsor of this program and houses its Hall of Fame museum. I
15 have nominated minority candidates to receive the presidential
16 national medal of technology of innovation -- and innovation
17 awards. CHANGES has utilized the USPTO meeting space. Also, the
18 USPTO space was used to celebrate the National Technical
19 Association's 90th anniversary where its member inventors were
20 acknowledged and celebrated.

21 The purpose of my testimony is to express the urgency
22 that the Federal Government needs to respond to, its

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1 responsibility to work with the private sector to close the gaps
2 between a number of patents applied for and obtained by
3 minorities, women, and veterans compared with the rest of patents
4 obtained in the nation.

5 This is necessary in order to harness its maximum
6 innovation potential of all and to continue to promote the United
7 States leadership in the global economy. Currently, the human
8 capital of women, veterans, and in particular, minorities, is
9 underdeveloped or undeveloped. The U.S. cannot afford to waste
10 technical talent because it threatens our national economic
11 security. It must include organizations like CHANGES to
12 accomplish the goals of the SUCCESS Act.

13 The inventors of the SUCCESS Act fail -- fails -- I'm
14 sorry -- the objectives of the SUCCESS Act falls within the
15 purview of the organization that are represented in CHANGES. The
16 significance, our involvement, is often overlooked and not
17 solicited until all the planning has been completed. We often
18 find ourselves reacting to and retrofitting ineffective solutions
19 that could have been avoided if we had been at the table in the
20 beginning.

21 Because only a few days were allotted to prepare my
22 comments, I have chosen not to address all of the issues provided

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1 in the Federal Registry. The issues that I will address are
2 sources available to identify minority inventors to the impact of
3 education and professional circumstances and socioeconomic factors
4 that facilitate or hinder the ability of women, minorities, and
5 veterans to apply for and obtain patents or to pursue
6 entrepreneurial activities, the social and private benefits that
7 result from increasing the number of patents applied for and
8 obtained for the same target group as well as businesses owned by
9 these groups.

10 I will provide insights on the impact of educational,
11 professional circumstances as well. In addition, I will identify
12 some institutions and entities that should play an active role in
13 promoting the participation of minorities in particular.

14 Further, my testimony will identify some public policies
15 funding needs to programs that the Federal Government should
16 develop and implement -- should promote the participation of the
17 targeted groups, data available on minorities of interest. The
18 vast majority of information available about minority inventors is
19 spread out in biographies, are listed in tables found in books,
20 presentations, or internet sites. The information has been
21 primarily generated by minorities themselves.

22 The one historical study commissioned by the USPTO to

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1 determine the number of African-American patentees was researched
2 and published by Henry Baker, an African-American patent examiner,
3 in 1913. It is the only formal study that has been conducted to
4 this date. It is only of late that others, other than minorities
5 themselves, have been interested enough to determine the
6 contributions of African-Americans and their attainment of
7 patents.

8 There is a diverse number of publications which can be
9 utilized to identify minority inventors, but the information is
10 dispersed among many documents and few contain numerical data like
11 the 1913 study. Such sources require follow up with patent
12 numbers and verification to establish their credibility. Also,
13 the data from the various sources must be consolidated.

14 Some inventors, however, may have more than 100 patents.
15 For example, Dr. Marian Grove (ph) has over 200 patents, with
16 others pending. She's a great candidate for the induction into
17 the National Inventors Hall of Fame. It is not clear whether the
18 intent of the study is to determine the number of inventors versus
19 the number of inventions. Probably both types of data are needed
20 to make a complete study.

21 The publication frequencies vary and all issues may not
22 always include information on inventions. Information may only

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1 appear as a featured story. Some publications have been
2 discontinued. Examples of such publications are the U.S. Black
3 Engineer magazine, of which is quarterly; the National Technical
4 Association Journal, which is an annual publication. The National
5 Society of Black Engineers Golden Torch Award is an example of an
6 award program that's held annually. The National Organization for
7 Professional Advanced of Black Engineers, (indiscernible),
8 conducts an annual conference and awards program, to name just a
9 few.

10 Many minority inventors are members of the 40-plus
11 minority technical societies, and among -- and information about
12 their inventions is attained through regular meetings and annual
13 conferences. Newsletters, hard copy, and electronic are also
14 among the types of publications that include data on
15 African-American engineers.

16 Also, there is some information that can be gleaned from
17 historically black colleges and universities who record patents
18 obtained from research and development. HTC used especially those
19 who have signed entrepreneurship and innovation programs where
20 graduates on inventions resulting from their research.

21 The White House initiative on historically black
22 colleges and university programs should be helpful in attaining

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1 the names of the HTC youths that have innovation programs. A 2017
2 review of 11 HTC youths, which are the Carnegie (ph) classified as
3 R-2 or Class 2 research holders --

4 MR. CABECA: And that's time, so we can just take a
5 minute to wrap up your comments. Thank you.

6 MS. CARWELL: I will.

7 Also, let me just skip down to suggestions for
8 generating the missing data. I consulted a computer scientist who
9 simply verified that you can compare the USPTO database with the
10 census data that's sorted by gender and race and ethnicity. And
11 within a week, you can construct a database identifying minorities
12 and women. The data will be nine years old, but if it's thought
13 to be useful, suggestions to the 2020 census may also be helpful
14 to include questions that provide the data.

15 The impact of education professional circumstances and
16 also the access to funding, many minorities of first generation
17 college graduates and resources are scarce, to say the least, when
18 they come -- graduate with monumental debt -- college debt. They
19 do not have a nest egg or access to discretionary funding to
20 pursue -- to pursue patents. Assistance is sorely needed. Even
21 other than women have this -- share this same problem.

22 MR. CABECA: Thank you.

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1 MS. CARWELL: Can I skip to my recommendations?

2 MR. CABECA: Thank you. If you can just take one minute
3 left.

4 MS. CARWELL: CHANGES recommends the following: Support
5 for CHANGES, minority, technical organizations, minority serving
6 institutions should be increased so they can join in the work with
7 the federal government as full partners to help motivate and
8 nurture the target population.

9 Diversifications of positions that fall out from the
10 SUCCESS Act should be stipulated to definitely be diverse.
11 Recommendations that accommodate cultural differences,
12 educational, and economic differences should definitely be a part
13 of the recommendations. Congress should definitely provide
14 adequate funding to achieve the goals of the SUCCESS Act.

15 Also, the patent process is sometimes daunting,
16 depending on the level of education of those who are curious
17 enough or passionate enough to make a difference in bringing their
18 ideas to fruition.

19 MR. CABECA: Thank you. Your testimony can be -- your
20 written testimony can be made part of the record for our report,
21 and thank you very much for providing your testimony. I
22 appreciate it.

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1 In the interest of time and keeping us on track for the
2 afternoon program, we're going to take this opportunity now to
3 break for lunch. So, again, lunch is on your own. So there's a
4 variety of different places nearby. And we'll reconvene here just
5 prior to one o'clock to get started, one o'clock sharp.

6 So if you'd like to grab your lunch and bring it back,
7 as I alluded to earlier, there is a conference room on the
8 opposite side of this floor where you can sit at a table. There's
9 also tables here in the lobby, and we welcome informal discussions
10 with the USPTO and SBA team and all of our presenters and
11 participants here today. So thank you. That concludes the
12 morning session, and we'll reconvene again at one o'clock or just
13 before. Thank you.

14 (A lunch recess was taken.)

15 MR. CABECA: Okay. Good afternoon, everyone. This
16 is -- for those on the line, this is John Cabeca, welcoming
17 everyone back to the afternoon session and public testimony for
18 the SUCCESS Act hearings. I'd like to go ahead and get started
19 and introduce our first speaker, Tina Door, who is counsel at
20 Cantor Colburn law firm and also the secretary for the Women in
21 Intellectual Property Committee at the Intellectual Property
22 Owners Association. Tina?

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1 MS. DOOR: Thank you very much. First of all, I want to
2 thank the USPTO for this opportunity to speak today, and I'm
3 honored to be able to contribute to not on an important discussion
4 but a discussion that is near and dear to me as a scientist, as an
5 IP practitioner, and as a diverse woman, as my mother is an
6 immigrant from South Korea and my father is a U.S. Navy veteran.

7 Everyone's done a great job of setting the stage,
8 talking about the narrative reports, so I won't talk about any of
9 those statistics, but I do want to mention that the institute for
10 women's policy research has predicted that, without the concerted
11 effort to change the course, it will take until nearly the end of
12 the century to reach (indiscernible) in innovation, and that is
13 something that is hard to stomach.

14 Like many organizations, IPO was alarmed by this data,
15 and they wanted to devote real time and resources to address -- to
16 raising awareness of the issue and also to provide tools for
17 companies or organizations to address the issue.

18 And so there are real reasons to be concerned, and this
19 is on both sides of the fence, from the inventor's perspective and
20 then also from the corporation's perspective. Concern from an
21 inventor's perspective stems from the fact that, in many technical
22 fields, a patent filing is related in some way to salary increases

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1 and promotions within the organizations. So that means
2 potentially a disparity in salary or level within an organization
3 could be related in some way to patent filing.

4 And, then, on the other side of the fence, concern from
5 the organization's point of view stems from the fact that, when
6 innovation is left unpatented, economic value is left on the
7 table. And, of course, corporations, organizations all want all
8 of their employees living up to their full potential and
9 contributing their highest value.

10 So IPO has various committees. I'm a member and
11 secretary for the Women IP committee, and we have a subcommittee
12 called the Women Inventor Subcommittee, and Sandra Nowack, who
13 many of you know, and Michelle Dugby, have done -- have
14 spearheaded a lot of this work, and the subcommittee has looked at
15 this issue. And there are two goals of this subcommittee: One,
16 to raise awareness of the issue, and the second goal is to offer
17 specific tools that corporations and organizations can use to
18 specifically address those issues.

19 Now, to deliver those goals, the subcommittee has spent
20 the last year or so doing a couple of things: One, public
21 speaking on this topic as much as possible at events like today,
22 at CLEs, but also speaking directly with organizations and

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1 corporations about the issue.

2 The second thing that I'll touch on today is a toolkit's
3 been developed, and this toolkit will be available. The goal is
4 to launch in September, around the time of the annual meeting. It
5 will be available on the IPO's website, and importantly, in
6 this -- this just demonstrating how important this issue is to
7 IPO, it will be available to not only IPO member organizations but
8 it will be available to all corporations, anyone who wants to
9 access the toolkit.

10 The toolkit briefly -- and I'll talk about in its
11 current state -- includes four general steps, but it allows
12 organizations and corporations to assess their current state of
13 awareness. It provides the tools to dive deep into the root
14 causes of their issues that they might have, and it provides tools
15 for implementing, monitoring, and assessing the success of those
16 short-term and long-term programs.

17 Importantly, the toolkit includes four steps, and these
18 steps are intended to be circular rather than linear, so it's a
19 continuous process of these four steps. The first step is to
20 raise awareness -- and I'll talk about each of these a little
21 more -- to raise awareness, the second is to discover root causes,
22 the third is to develop a short-term and long-term program

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1 targeted to those root causes, and the fourth is to launch and
2 monitor the programs.

3 Now, going back to the first step: Raising awareness.
4 We're all very aware of the issue in this room because we're sort
5 of it in, but I am still surprised at how people may not be as
6 aware as we are. So that's an important part of the toolkit, and
7 this part of the toolkit includes things like a short elevator
8 speech. It took five minutes. Sometimes that's all you have to
9 present your case. And it includes sample slides for executives
10 in leadership. It includes tools for how to get the data to see
11 where your organization currently stands to gather that data,
12 because that's what you need to move forward.

13 The second step after raising awareness is discovering
14 root causes. And it's no surprise that, when organizations and
15 corporations spend time up front understanding the causes for
16 their particular group, that they are more effective at
17 implementing long-term sustainable change. Examples of different
18 root causes include difference in confidence gaps, differences in
19 accessibility and knowledge of patent filing.

20 The third step is to -- once you understand those root
21 causes, to develop short-term and long-term programs, and, again,
22 this section is organized by root cause, and it will include

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1 examples of programs that other organizations and corporations
2 have previously found to be effective at addressing those
3 particular root causes.

4 The last step is launching a monitoring of those
5 programs, and this section includes ideas for successful launch as
6 well as metrics and monitoring activities for assessing the
7 progress and success of those programs because there's no point of
8 continuing with a program if it's not being successful, so this is
9 important, to continuously monitor the progress.

10 Lastly, this section includes tips for when to go back
11 to step two, because I mentioned before that it's important that
12 these steps are repeated in the cycle. And so, sometimes, you
13 need to -- if something is not working, you need to go back and
14 maybe raise awareness to upper-level management, if there's a
15 change in leadership that you need to address, or maybe there's a
16 new root cause that you need to dive into and further understand.

17 So that's the toolkit in a nutshell. Another important
18 point about the toolkit is that it's never intended to be
19 finished. Instead, it's intended to be a living document that
20 stores and houses information that's continuously updated, and
21 that's based on feedback from others who are using the toolkit.

22 And to that end, we are currently working with many

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1 organizations, 425 currently. We're always looking to add more,
2 including Proctor & Gamble, who ranked No. 1 on the PTO's report,
3 Dell, Bristol-Myers Squibb, 3M, and of course we're looking into
4 organizations like the PTO, (indiscernible), and all them.

5 So, again, a lot of the value comes from input from
6 organizations and corporations who use the toolkit and use it and
7 provide feedback for revisions. So with these concerted efforts
8 to, one, raise awareness and tools that organizations and
9 corporations can use to improve their diversity, we hope that we
10 can move that needle significantly further away from that
11 predicted antonym by the end of the century to reach gender parity
12 in innovation. Thank you very much.

13 MR. CABECA: Thank you, Tina.

14 I'd now like to call up Liji Gopalakrishnan to -- from
15 Rambus to come and provide her testimony on behalf of Rambus.
16 Thank you.

17 MS. GOPALAKRISHNAN: Good afternoon, everyone. I am
18 Liji Gopalakrishnan, director of memory architecture research
19 Rambus Labs. I have been working in the semiconductor industry
20 for over 20 years now, out of which around 14 years have been at
21 Rambus in various roles.

22 The thing is that since I'm working in this field and --

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1 I mean, I heard inputs from different members of the society here.
2 It was very interesting, and as any inventor, I have about 13
3 issued patents and a few pending ones and many technical
4 publications and conferences. I thought it was important for me
5 also to come here and share some thoughts on how to improve
6 participation among women, because it is a real problem, and that
7 I can see every day.

8 Okay. I think, just on the personal side, just to share
9 a little bit about myself, I'm a family person. I have a teenage
10 daughter who is a freshman at college now. And I came to this
11 great country when my daughter was just a baby and went through
12 all the struggles of an immigrant: Adapting to the new culture,
13 trying to raise my kid, find a job, and I mean, try to -- doing my
14 master's in electrical engineering, all while working and
15 raising -- I mean, supporting my family. That's all really hard.

16 If you don't have mentors or a support structure around
17 you, it's not at all easy, and that's why I can identify with the
18 struggles of many women out there, I mean, really having gone
19 through this process.

20 And that is one of the reasons why I have been kind of
21 volunteering in many STEM-related activities. I really liked
22 Stephanie's speech, and that was -- I mean, similar things is what

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1 I think we need to encourage women to participate. For many years
2 ago, almost eight years now, I have been leading and at workshops,
3 organized by expanding new horizons and organizations and also
4 volunteering as a judge at Silicon Valley science fair.

5 I was looking at the list of suggested topics for
6 speakers at this hearing, and one which then I saw was on the
7 social and private benefits of increased patent applications for
8 minorities, women, and veterans. I thought that's an important
9 question but, in my mind, to answer that question, I think we
10 should first consider or examine why innovation is important in
11 general. Okay. That's one part of it, like having a patent
12 benefits the mentor person, for instance, and the other bigger
13 question of how women benefits the society or more as a whole.
14 And I'm just going to focus on the second part in this case.

15 I think from the age-old days when prehistoric man
16 invented the wheels and hunting weapons and everything like -- the
17 survival human -- humankind has survived and flourished, and I
18 believe not because of their muscle power but because of their
19 brain power. So that supports the main point here.

20 I mean, all the data that I'm going through the industry
21 of revolution and the rise of the semiconductors where I work and
22 internet and space technology, just to name a few. Right? All

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1 fields like medicine, agriculture, transportation, communication,
2 sports, entertainment, everything has benefitted from all this
3 brain power and ideas and innovations and developments that have
4 happened over the ages.

5 I think it's only natural, we want to continue this
6 human race to advance. It's not just an individual, personal
7 problem or this one country's problem. Just for the human
8 kindness, it's important for us to increase this innovation
9 process.

10 Okay. Now, that we have just talked about the general
11 importance of innovation, I think the next question, of course, is
12 about how to -- and creating more of it. And there are many ways,
13 but one of the very simple, straightforward answers: To get more
14 people involved. And that is where, when I look at the
15 statistics, and I think (indiscernible) was discussed, that 50.8
16 percent of the population -- U.S. population and (indiscernible)
17 of women, how come only 12 percent of them are contributing to
18 practice of innovation? That's a huge opportunity there. And
19 when we add minorities and veterans and other such groups, then
20 the number goes up even more.

21 The ideas like -- the goal is to get all of these
22 different segments of population to contribute, to solving the

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1 problems that we all face all over the world, I would say, and
2 kind of bring in the diverse perspectives and increase the quality
3 of the solutions and inventions they bring to the table. So I
4 think that that's working, in my mind, is very important.

5 And now when we -- when we talk about bringing the
6 equality of (indiscernible) to the field, then they gain --
7 sometimes I've heard questions from people: Why do we say that
8 some special groups need more help and why do they get a
9 special -- we do we talk about them more (indiscernible)? I mean,
10 that's right, but again, I can't speak for all these sections but
11 at least for women, I think there are multiple reasons why they
12 need a little more help. Number one, one thing is they face some
13 unique challenges, like childcare obligations, household
14 responsibilities, a lot of things.

15 I still remember the anxiety I used to feel when I was
16 taking evening classes for my master's course with my
17 seven-year-old waiting outside the classroom for her mom to finish
18 up. I used to send her to daycare in the mornings and other
19 things so, when there's no school, it was fine, but I could not
20 find childcare in the evening on nights. People have their own
21 life. There was nobody to kind of support or help me out at that
22 time. So either you give up your dream or you can go through some

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1 extreme situations like this. I'm lucky I have a very
2 understanding and nice little sweet little daughter. But now we
3 are through all that. But I can imagine it's not just me. There
4 are other people out there going through probably much worse than
5 that.

6 Okay. The second one is the lack of information on
7 exclusion (ph). Even, like I said, I came to know about these
8 things much later, and a lot of girls, they don't get heard to
9 hear about the patent process or the opportunities and what it
10 takes to achieve that goal.

11 And then the other challenge, I think is for those
12 especially is many of these topics don't often come into their
13 discussions. Like regular discussions are not about these kind of
14 things, and this carries on into adulthood. When a bunch of men
15 get together and talk, it's about seven kinds of topics very
16 often, and girls don't get to hear about that. They don't get
17 that same kind of opportunity.

18 And number three is (indiscernible) of society. Coming
19 to this last week, I was listening to (indiscernible) by Rachel
20 Oshawa. She's the (indiscernible) at Intel. And I thought her
21 story was very funny, so I thought I would share it here. She was
22 talking about when she attended a big Wall Street board meeting,

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1 she walked into the room -- (indiscernible) somebody here -- she
2 walked into a big Wall Street board meeting and sat down on a
3 chair, and the gentleman sitting next to her stood to get him a
4 cup of coffee. Of course the woman, at such a meeting, she must
5 be an admin. What else can she be? So she was very gracious
6 about it in the way she handled it, but the thing is, see, we have
7 a long way to go before society starts seeing men and women as
8 equal in all fields. And that is the experience of somebody at
9 that level, you can just imagine normal, everyday women.

10 Okay. Now, going forward, it's the lack of normalness.
11 This is another challenge, especially with such a low rate of
12 mentorship among women. The young girls, they don't get to learn
13 from inventors and see live examples of how this innovation
14 process happens, and that play be a big deal. I mean, it's a big
15 thing to be able to see this.

16 Even in my case, I work in a company which is -- I mean,
17 it was founded by Stanford professor Mark Horowitz and my
18 (indiscernible) to commercialize that foundation and inventions,
19 and the whole company is rooted in innovation and patent licensing
20 and things like that. Even for me, it was very hard to get
21 started. I mean, for example, just to give you an idea about the
22 process. You first have to come up with a good idea, which is

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1 (indiscernible). We are usually self-critical and we are
2 (indiscernible). And then, after that, you submit your idea.
3 Then you have to present it in front of a bigger approval
4 committee, which, as you may guess, consists all of men, and
5 (indiscernible) and then you have to defend it. They all ask so
6 many questions and it's not easy. It can be really intimidating
7 in how you really you want to go out of your comfort zone and do
8 all these things. So it's not easy for -- not only easy for many
9 men, let alone, you know, many women. It's other people -- it can
10 be really tough.

11 So now, recently, as the only female working member of
12 that committee, it's been a tremendous help. I get to see not
13 only and share of my ideas and things, also about other peoples,
14 what they're doing and how they go about this. It helps. And
15 then you get more ideas, hearing about other people and what
16 they're doing and to get -- I mean, that's how it kind of -- it's
17 a cross-pollination, and it's a positive feedback.

18 So, finally, when we think about how to increase
19 participation on all these sections, what I think is possibly
20 (indiscernible) on these properties that I just listed. And only
21 then we can kind of make a dent here. And it's all about training
22 and giving the women (indiscernible) the necessary tools,

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1 spreading awareness. And if USPTO could do something like what
2 Stephanie's group was doing, like provide volunteer blank forms
3 where women or minority inventors can come and kind of inspire and
4 mentor (indiscernible), that will go a long way. And especially
5 like, with my STEM activities, I feel that whatever there are
6 hands-on activities, rather than just talking or lecturing, like,
7 kids really get excited. They get to see, okay -- I mean, kids
8 are -- no, not kids. Young women, like whoever -- I mean, is
9 qualified, we should encourage all of these sections to
10 participate and to see the thing for real and kind of having
11 somebody there who has gone through this process to help them. I
12 think that can make a real difference.

13 And then -- and I'm hearing about all the legal clinics,
14 pro bono clinics. That's really good work that these groups are
15 doing. Thank you.

16 And then collecting the demographic info (indiscernible)
17 question, I think that's a great idea. It will help us measure
18 progress and treat the programs, right, because we want to ensure
19 the success. I don't think there is any one silver bullet that
20 can solve all this, so it will be to have a collection of efforts
21 by different groups, including the PTO. And it's important to
22 keep (indiscernible) how -- whether we are making a dent or is

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1 there something we need to change so that we can figure it out.

2 And, automatically, in my mind, it's about our -- about
3 equal opportunity and contribution from all sections of the
4 society towards the progress of mankind, this nation, this world.

5 And I wish USPTO all success with the implementation of the
6 SUCCESS Act. Thank you.

7 MR. CABECA: Thank you, Liji.

8 Okay. Next, I'd like to ask Charu Kurani from Facebook.

9 MS. KURANI: Thank you for your time today. I'm honored
10 to attend the third public hearing of the Study of
11 Underrepresented Classes Chasing Engineering and Science Act
12 signed into law on October 31st, 2018. My name is Charu S.
13 Kurani, and I'm a patent attorney on the legal team at Facebook,
14 and I'm speaking here today on behalf of Facebook.

15 Diversity and inclusion are very important values at
16 Facebook, and we're committed to taking action that focuses on
17 identifying and improving the underrepresentation of people in the
18 patent system. This issue is also very important to me
19 personally. As a mother to a young daughter, I want to do
20 everything that I can to change what the future looks like for
21 her. If she chooses to go into tech one day, I want to see -- I
22 want her to be able to see other women innovating and

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1 participating in the patent system at the same rate as their male
2 counterparts. I want to her feel like she belongs.

3 Today, the USPTO is seeking comments from the public on
4 the participation of women, minorities, and veterans in
5 entrepreneurship activities in the patent system. In particular,
6 we note that the USPTO believes businesses, among others, have
7 relevant information on the number of and benefits from patents
8 applied for and obtained by women, minorities, and veterans, as
9 well as small businesses owned by these groups. I'm here today to
10 voice Facebook's support of this initiative and to encourage the
11 USPTO, universities, and other institutions in the patent
12 ecosystem to provide education to participants of the patent
13 system about the issues highlighted by the SUCCESS Act.

14 I'm also here to describe Facebook's efforts in closing
15 the equity gap in patenting -- in inventing and patenting for
16 women, one of the key aims of the act. Innovation is at the heart
17 of Facebook's mission. We invest a significant portion of revenue
18 in the innovation of products and services to connect the world.
19 In fact, in 2018, Facebook invested over \$10 million into research
20 and development, which is almost 20 percent of its revenue.
21 Because the patent system plays a critical role in protecting and
22 facilitating the ability of our engineers to innovate and to

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1 introduce these products and services to the world, Facebook
2 supports a strong but balanced patent system that promotes
3 innovation.

4 Facebook has been and continues to be an active
5 participant in the patent system, with well over 15,000 patents
6 related to hardware, software, including virtual and augmented
7 reality, infrastructure, connectivity, communication, commerce,
8 and artificial intelligence.

9 While a robust patent system is necessary to drive
10 growth and stimulate innovation, diverse perspectives are just as
11 critical to fuel research and drive growth. In particular, women,
12 minorities, and veterans bring with them these diverse
13 perspectives in the form of fresh ideas and valuable insights that
14 greatly impact the development of these products and services of
15 the future.

16 However, since women have -- in particular, have been
17 historically have lower rates of participation in technical roles,
18 businesses have routinely lost out on their diverse perspectives,
19 leading to stymied economic growth and innovation. In fact, in
20 the report entitled "Progress and Potential: A Profile of
21 American Women Inventors on U.S. Patents" recently issued by the
22 USPTO, it suggests that women's innovative potential is being

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1 underutilized and that women can be considered lost
2 (indiscernible) in science, people who would otherwise contribute
3 valuable inventions if they had early exposure to innovation in
4 the inventor roles.

5 The report further suggests that harnessing women's
6 underexplored talent would be valuable to spurring innovation and
7 tracking growth. At Facebook, we are actively striving for a
8 diverse workforce. The percentage of women in technical roles has
9 increased from 15 percent to 22 percent in 2018, according to
10 Facebook's fifth annual diversity report.

11 While the number of women at Facebook has increased five
12 times over the last five years and the number of women in
13 technical roles has increased over seven times, we are still
14 actively working to increase the number of women in technical
15 roles so as not to lose out on our lost (indiscernible) science or
16 rather, what we refer to as our lost Marie Curies.

17 As of February 2019, 24 percent of Facebook's organic
18 patent applications named at least one woman inventor, and we
19 would like to see that number continue to climb. Facebook
20 recently launched an internal diversity initiative specifically
21 aimed at increasing the number of women who make patent
22 applications. The initiative includes a number of efforts

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1 focusing first on increasing access to and visibility of the
2 patent process to women within the company.

3 The patent team at Facebook is developing programs to
4 provide additional education to women, about patents and the
5 process by which patents are obtained at Facebook. We are also
6 planning to host a career panel with prolific women inventors who
7 will talk about positive impact that patents have had on their
8 careers. Additionally, the patent team is hosting patent harvest
9 sessions for women, led by women. Each of these initiatives is
10 introduced with a specific goal of achieving gender disparity in
11 patenting.

12 Further, Facebook is not only interested in addressing
13 gender disparity in patenting but is also interested in better
14 understanding the barriers that women face in participating in
15 Facebook's patent program. To that end, Facebook will be
16 collecting feedback from women on their experiences with
17 Facebook's patent program so that we can identify and address
18 these barriers.

19 While these initiatives are internal to Facebook, we are
20 also interested in advocating for change in the tech industry at
21 large by partnering with the USPTO and other companies and
22 associations. Facebook has committed to using the Intellectual

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1 Property Owners Association's achieving gender disparity in
2 innovation toolkit. In using the toolkit and obtaining results,
3 Facebook is looking to provide feedback to the IPO, as well as to
4 the USPTO, about our barriers and about best practices we have
5 implemented to address these barriers. In doing so, Facebook is
6 hoping to set an example and encourage other businesses to do the
7 same to effect and scale positive change across the industry.

8 Although we have already kicked off a number of programs
9 focused on diversity among patent applicants, we recognize that
10 it's a complex problem that needs to be addressed holistically.
11 Studies indicate that's the skilled labor shortage in America
12 could create 85.2 million unfilled jobs by 2030. Facebook is
13 committed to helping reverse the skills gap in America by giving
14 individuals and companies the tools they need to flourish in an
15 increasingly digital economy, which also will increase diversity
16 in jobs that require digital skills, like coding and digital
17 marketing.

18 Last year, Facebook pledged to train 1 million U.S.
19 small business owners by 2020 and equip more people with digital
20 skills they need to compete in today's workplace. As part of our
21 pledge, we have expanded a digital training program to 50 cities,
22 partnered with over 60 organizations and dozens of community

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1 colleges across the country. We also launched an e-learning
2 program called Facebook Blueprint, which includes classes
3 available in 14 languages with over 80 online courses. Our
4 Blueprint team works with local associations, such as the Small
5 Business Association, America Small Business development centers,
6 and national small business associations to offer free in-person
7 local training events leveraging Blueprint curriculum. Thousands
8 of U.S. small businesses have already been trained using
9 Blueprint, and by 2020, we plan to train an additional 250,000.

10 Facebook is also committed to doing business with
11 diverse-owned companies because having diverse suppliers helps us
12 build better products for our global community. Facebook supplier
13 diversity connects qualified diverse-owned businesses to our
14 fast-moving community while also helping these companies grow
15 their businesses on our family maps.

16 In 2017, Facebook spent \$233.6 million with U.S.
17 companies certified by both private and public organizations as a
18 majority owned and operated and controlled by racial and ethnic
19 minorities, women, veterans, LGBTQ people and differently-abled
20 entrepreneurs. Of that investment, 145 million went to
21 minority-owned businesses, and 92 million went to women-owned
22 businesses. We believe that our broader efforts to enable small

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1 businesses and promote supplier diversity will contribute to more
2 innovation and greater diversity in the inventor community.

3 Facebook has contributed to increasing the
4 representation of women in filing patent applications and believes
5 that the USPTO is well positioned to provide the industry at-large
6 with data of women's entrepreneurship and inventorship on patent
7 applications. Facebook is excited to support this initiative both
8 internally and across the industry, and we're grateful to partner
9 with the USPTO on this important effort. Thank you.

10 MR. CABECA: Thank you very much.

11 So that concludes our scheduled public testimonies. I
12 just want to take a moment to thank everybody for their
13 testimonies thus far and appreciate everyone for taking their time
14 out of their busy days to participate in this important effort in
15 partnership with the SBA.

16 And I want to take the opportunity now to open the floor
17 for anyone that would like to make public comment that has not
18 already been recognized.

19 Okay. I always heard wait five seconds.

20 All right. So, then, since there is no additional
21 open-floor testimony, unscheduled testimony, other than the one we
22 had earlier this morning, I'd like to move towards our closing

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1 remarks and close up the program.

2 I thought it would be important, in closing, to talk
3 about next steps so that you have an understanding of what we're
4 going to do with all of this wonderful information. So we have --
5 as we mentioned before, we have one more public session, one more
6 day of testimony we'll actually be doing in our regional office
7 located in Detroit, Michigan, on June 18th. After that, the team
8 plans to digest and deconstruct all the public comments and
9 transcripts from the three roundtables -- from the three
10 testimonies and to start identifying where there's overlaps and
11 where there's some key take-aways that can actually translate into
12 concrete steps that the USPTO, in partnership with the SBA, can
13 fold into the report in a recommendation going forward to
14 Congress.

15 So we plan to work with the SBA very closely in that
16 process as well as with other -- our Department of Commerce
17 agencies and other federal agencies as well to help build a
18 comprehensive cross-functional report that will support
19 minorities, women, and veterans in the patenting and -- in
20 promoting patenting and entrepreneurial activities.

21 So according to the SUCCESS Act, it charged that the
22 USPTO and the SBA to conclude the report within one year, so we're

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1 being a very date-driven agency -- we don't like to turn anything
2 in late; what know what that means to our stakeholders too -- so
3 you can fully expect that the report will be out in the public by
4 the end of October 2019.

5 Again, I just want to thank everybody for participating
6 today at headquarters and Julie from yesterday for spending the
7 day with us as well and to all of you. And if there's anything
8 additional that we can do to help support this effort, please
9 continue to share your thoughts and ideas and perspectives.

10 With that, again, thank you very much, and have a great
11 rest of your day.

12 (At 2:59 p.m., the above hearing concluded.)

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CERTIFICATE OF TRANSCRIBER

I, Bobbi J. Fisher, do hereby certify that the foregoing transcript is a true and correct record of the recorded proceedings; that said proceedings were transcribed to the best of my ability from the audio recording and supporting information; and that I am neither counsel for, related to, nor employed by any of the parties to this case, and I have no interest, financial or otherwise, in its outcome.

Bobbi J. Fisher, NCRA Registered Professional Reporter/Transcriber
June 9, 2019