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The IDEA Act is a Bad Idea

By Ron D. Katznelson, Ph.D.

As previously [reported](#), a bi-partisan group of senators recently reintroduced a bill in Congress called the “*Inventor Diversity for Economic Advancement Act of 2021*,” or the “[IDEA Act](#),” S.632; H.R.1723. Citing a report that “only 22 percent of all U.S. patents list a woman as an inventor,” the sponsor’s [press release](#) explains that the bill’s purpose is “to close the gap that women, minorities, and others face when procuring patent rights in the United States.” To advance this putative goal, the bill adds Section 124 to the Patent Act that will require the US Patent & Trademark Office (PTO) to annually collect and report personal demographic data from patent applicants including “gender, race, military or veteran status, and any other demographic category that the Director determines appropriate, related to each inventor listed with an application for patent.” Accordingly, the PTO Director would be granted plenary authority to collect information on “any other demographic category” such as those the sponsors have already identified in their previous version of the bill, namely: ethnicity, national origin, sexual orientation, age, disability, education level attained, and income level.^[1]

I strongly support closing the societal gaps in the abilities of individuals to participate in, and benefit from, invention and technological innovations; and I believe that this is also the well-intended goal of the sponsors and supporters of the IDEA Act. I believe that efforts and resources for closing such gaps should be focused where they can *actually* have real effect—by targeted assistance for STEM education, mentorship, and professional training in the years prior to patenting. The lawmakers sponsoring this bill have established records of supporting strong patent rights and are widely respected for being champions of small business inventors. Unexpectedly, however, this bill would actually harm small business and underrepresented inventors. As explained below, this legislation is contrary to patent law; it proposes a dangerous method for injecting identity politics at the PTO, where it never has nor should play any role, and where there is no evidence that the PTO has displayed prejudice or discrimination.

The implied premise of the bill is that “women, minorities, and others” may be disadvantaged “when *procuring* patent rights in the United States”—that they somehow face *discrimination* at the PTO in the *patenting process itself*. This notion is echoed by an advocacy group’s proposal for removing inventors’ names from patent applications to “mitigate potential gender and racial biases” in PTO

^[1] The expanded demographic categories in the earlier version of the bill included “gender, race, ethnicity, national origin, sexual orientation, age, military or veteran status, disability, education level attained, and income level.” See [HR 4075](#) and [S. 2281](#), both introduced in the 116th Congress on July 25, 2019.

examination.^[2] But there is no evidence to support this premise of discrimination at the PTO. If anything, the evidence and sources compiled in the PTO's [report under the SUCCESS Act](#)^[3] confirms that other pre-filing factors are determinative. Most importantly, whereas Figure 2 in this PTO report shows the share of women inventors at 22 percent of *issued* patents, the report lacks data on women's share of filed *applications*. The latter is additionally required for evaluating the "*grant rate*" (defined as the fraction of applications filed that successfully issue as patents) to assess whether women actually face any disparate outcomes *at the PTO*.^[4]

1. The Act's provisions for handling applicants' identity contradict the Patent Act and PTO's regulations and examination practice. Proposed § 124(b)(2)(B) would require the PTO to "establish appropriate procedures to ensure ... that demographic information is not made available to examiners or considered in the examination of any application for patent." But concealing such information from examiners is virtually impossible without turning on their head the Patent Act, the PTO regulations, and its long-established examination procedures.

First, examiner interviews are an integral part of the examination process, wherein the inventors explain in their own words to the examiner the invention and distinctions over the prior art. *See* 37 CFR § 1.133; MPEP § 713. These interviews are efficient ways to advance prosecution and are mostly [conducted by videoconferences](#), necessarily revealing to the examiner the inventors' gender, race, color, and approximate age. At least one interview is conducted for [one in every three patent applications](#).

Second, a great majority of inventor names reveal their gender, and sometimes their national origin or race. The [PTO observed](#) that gender can be determined from the name alone with an accuracy of more than 93%. Accordingly, PTO's procedures to comply with the Act would necessitate removal of the inventor's name from any document that examiners consider ^[2], in direct contradiction with at least the following patent statutes, regulations, and PTO examination procedures:

(a) A patent is issued to an inventor *by name*. Under the Patent Act, "[a]n application for patent ... *shall* include, or be amended to include, *the name of*

^[2] A group calling itself the "[Day One Project](#)" proposed to the Biden Administration a "program at PTO that removes inventor names and attorney names from patent application (as they are available to patent examiners) in order to mitigate potential gender and racial biases."

^[3] [P. L. 115-273](#) (October 31, 2018).

^[4] In and of itself, if found to exist, disparity in grant rate may not prove discrimination in examination at all. This is at least because examiners make rejection errors across all applications and it may only signify that financially-disadvantaged inventors may be unable to afford costly appeals or Requests for Continued Examination (RCEs) at the PTO to correct these examiner errors and vindicate their right to a patent. Evidence on relatively low usage of appeals and RCEs by applicants with limited means is shown in my [Statement before the Senate Judiciary Subcommittee on IP](#), Figure 1 at 8 (October 30, 2019).

the inventor for any invention claimed in the application.” 35 U.S.C. § 115(a) (my emphasis); 37 C.F.R. § 1.41. Even if Congress were to amend this statute, it cannot prevent the name of the inventor from being published in the international counterpart of the application, as required under foreign patent laws.

- (b) A published application under 35 U.S.C. § 122(b) contains the name(s) of the inventor(s) on the first page. See 37 C.F.R. § 1.215(c). When applications are so published at 18 months, it is usually prior to issuance and this necessarily makes them publicly available to the examiner during the examination period.
- (c) The double patenting bar (in 35 U.S.C. § 101, and the non-statutory obviousness-type) require the examiner of an application to *identify* all the *inventor’s* other patents and applications and to issue Provisional Double Patenting rejections when the claimed subject matter is the same, or patentably indistinct, across such applications. See MPEP § 804.
- (d) 35 U.S.C. §§ 120, 121, prescribe that inventor(s) of a continuing patent application “which names [the] *inventor* or *joint inventor* in the previously filed application” can claim priority benefit of the parent application, necessarily disclosing to the examiner the *name* of the common inventor.
- (e) 35 U.S.C. § 102(b)(1) (post-AIA) requires examiners to exclude as prior art any public disclosures made “by the *inventor* or *joint inventor*” 1 year or less before the effective filing date of a claimed invention. Entitlement to removal of such inventor’s public disclosure as prior art cannot be established without the inventor’s *name*.
- (f) As part of the novelty and non-obviousness determinations, PTO regulation authorize examiners to require from the applicant a “copy of any non-patent literature, published application, or patent (U.S. or foreign), by any of *the inventors*, that relates to the claimed invention.” 37 C.F.R. § 1.105(a)(1)(iii). These publications’ authors are identifiable by the *named inventor*.
- (g) Declarations filed under 37 CFR §§ 1.130 and 1.131 to overcome a rejection often require account of the *inventor’s* contribution and the signature of the declarant, who often is one of the *named inventors*.

Third, as a matter of policy, the PTO already provides *overt* preference to inventors based on demographic information—their age. Inventors 65 years or older qualify for expedited treatment of their application under 37 C.F.R. § 1.102(c)(1). Such applications are designated as “special” and continue to be so “throughout [their] entire course of prosecution.” MPEP § 708.01. Applications in “special” status are advanced out of turn in examination to the top of the examiner’s docket, thereby informing the examiner of the inventor’s old age.

2. The scant and selective data collected voluntarily would have no utility and thus doom the Act. The proposal is to limit the PTO data collection to voluntary submissions. There would be “missing data” on inventors, not only from those who do not file patent applications for fear of losing their patent at the PTAB

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(as inventor [Jeff Harding explained](#)), but also from those who file applications but decline to furnish the demographic information. Collection on a voluntary basis would produce very low response rates, rendering any inferences therefrom erroneous and subject to self-selection bias. Note that most inventors do not file their patent applications with which their personal information would be submitted. The patent attorney/practitioner filing the application would have to do so by collecting the personal information from the inventor under a professional duty of reasonable investigation and verification,^[5] subject to billable time. Further, only 4.2% of patents were issued to U.S. inventors unassigned. See PTO's [Patents Issued Breakout by Ownership Category](#). This means that the rest, about 96% of patents, are filed by companies to which an inventor assigned the application. And companies do not keep a record of their employees' race, declared gender, veteran status, sexual preference, etc. Given that furnishing this information to the PTO would be voluntary, companies will likely avoid the burden of collecting it from inventors in the first place. In part, this is because collection and reporting of such personal information may expose the company to secrecy obligations and further potential liability. Indeed, the U.S. Equal Employment Opportunity Commission's guidance titled "[Prohibited Employment Policies/Practices](#)" discourages "inquiries that relate to ... race, color, sex, national origin, religion, or age, [as] such inquiries may be used as **evidence of an employer's intent to discriminate** unless the questions asked can be justified by some business purpose." It is an open legal question whether a **voluntary** response to a survey constitutes a justified "business purpose."

The same would be true for the majority of the remaining 4.2% of applicants—the independent inventors mostly represented by a patent attorney. Patent practitioners who file the applications would be reluctant to get involved in collecting intrusive personal information from their clients if they can avoid it. They too may face malpractice liability if the confidentiality of such maintained records is breached. The rest of the applicants who actually file their own applications *pro-se*, are submitting no more than [a couple of thousand](#) (out of 452,000 serialized) applications per year, and for reasons discussed above, they too may well be reluctant to volunteer the information.

In conclusion, responses would likely be so few—less than 1% of applications^[6]—and skewed due to voluntary self-selection so as to **preclude** the PTO from disseminating statistically valid and unbiased results. This is because the demographic survey's frame will have failed to meet at least §§ 1.2, 1.3, 2.1, 4.1, and

^[5] The PTO regulations for patent practitioners in 37 C.F.R. § 11.18 require that information submissions be "formed after an inquiry reasonable under the circumstances" and that "all statements made therein ... are believed to be true," subject to the penalties set forth under 18 U.S.C. § 1001 for willful misrepresentation or false statements.

^[6] PTO's experience with similarly important but **voluntary** submissions in response to applicant surveys shows low response rate. The PTO estimated only 2,500 responses to its voluntary Patents External Quality Survey in its submission for paperwork clearance under [OMB Control No. 0651-0057 \(2019\)](#).

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5.2 of the government's *Standards and Guidelines for Statistical Surveys*, as required under the Paperwork Reduction Act and the Federal Information Quality Act.^[7]

The voluntary aspect of the IDEA Act may be a temporary feature to assuage initial objectors to the bill. If passed, future sponsors of an amendment to the Act would be able to point to the anemic applicant response rate and the need to increase statistical reliability by making applicants' submission *mandatory*.

3. Transforming PTO examination into an “equality of outcome” operation with identity-driven patent allowance quotas. Under proposed § 124(d)(1), the Act would require the PTO to publish annually the total number of patent *applications filed* and the total number of *patents issued* during the previous year, disaggregated by inventors' demographics and technology class. By simple calculations taking into account application pendency at the PTO, these reports will enable any member of the public to estimate the patent *grant rate* by inventors' identity characteristics and by examiner technology Work Group.

Inevitably, it would not be too long before activist groups and examiner analytics firms would use this published information to identify specific inventor groups as having disproportionately lower patent grant rate than other groups. Because no inventors' background information would be collected alongside their demographic data, the reports under the Act would contain no information that could shed light on any of the *causes* for, or *factors underlying* the patenting disparities that the data would reveal. In this critical information vacuum, the activists would claim that disparities can be explained by PTO prejudice—that “equality of outcome” is the only correct measure of “equity”—ignoring confounding factors unrelated to examination.^[4] The PTO would be accused of systemic prejudice, and that there are perpetrators at the PTO responsible for the purported prejudice. The reported patent grant rate for half of all examiner technology Work Groups would be below the average. Examiners in these Work Groups would face unfair scrutiny and even be accused of bigotry; examiner analytics firms would rank examiners by their level of grant rate “prejudice;” the PTO would be called on to institute “social equity sensitivity” training programs for examiners and set numerical annual progress goals “to close the gap that women, minorities, and others face when procuring patent rights.”

Whether or not the PTO under a Biden-nominated Director would want to institute such programs or set numerical application allowance goals is beside the point. The new Director may have no choice. The mere continued reporting on these identity-based disparities would generate implicit expectations and pressures on the PTO, on supervisors, and on examiners, to relax the allowance standards for applications

^[7] Office of Management & Budget, “*Standards and Guidelines for Statistical Surveys*,” *71 Fed. Reg.* 55522 (September 22, 2006).

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filed by inventors in favored groups so as to “close the gap” in the patent grant rate. There would be no way to avoid seeing measures taken by PTO management for “sensitivity” training or for “closing the gap” as anything but presumptively **accusatory** of examiners as bigots—otherwise these measures would not be “necessary.” Pitting PTO management against examiners in this unfair way would result in loss of moral, examiners’ resignations, and early retirements.

4. The IDEA Act would reduce patent quality and harm the very inventors the Act seeks to benefit. Whether admitted or not, “closing the gap” by any action of the PTO affecting patent grant rate of demographically-favored applications, would necessarily mean relaxing the patentability examination standards for those applications. This would result in lower quality patents issued to inventors in such favored groups. The greater the reported “progress” in “closing the gap” under the Act, the higher would be the fraction of invalid patents issued to such inventors. The mere upward shift in **reported** grant rate for demographically favored groups would quickly lead to public stigma, as patent holders in these groups would be perceived as the beneficiaries of less rigorous allowance standards, thus holding lower quality patents. This would harm their reputation and detract from their ability to enforce their patents. Discrimination, for which there is no current evidence, would become very real.

5. Should patent applicants be saddled with loss of patents and the cost of government studies on social disparities? Based on PTO’s paperwork burden estimates for information collections similar to that contemplated under the IDEA Act, the recurring costs to the applicant and the PTO of gathering, furnishing, verifying, and processing the information would total about \$310 per application.^[8] This does not include the PTO’s costs for developing and maintaining the separate secure demographic database and reporting infrastructure. Because the PTO is fully funded by user fees, the total new costs will be imposed on applicants. Submissions would have to be made mandatory for the information to be statistically meaningful (see Section 1 above); incremental costs of mandatory submissions would suppress application filings, as readily estimated below:

Assuming the costs to applicants for submitting the demographic information are as the PTO estimates for similar submissions discussed above, \$310 per application, the current application costs at filing (Filing/Search/Examination) of \$1,820, \$910, and \$455 for large, small, and micro entity **fees** respectively, would effectively increase by 17%, 34%, and 68%, respectively for large, small, and micro entities.

^[8] Furnishing the demographic information under the Act would be at least as burdensome as in applicant submission for correction relating to inventorship or an inventor name, or order of names, under 37 C.F.R. § 1.48. For that submission and its processing by the PTO, the Office estimates that the paperwork burden on the applicant and the PTO is an average of 63 minutes of attorney and paralegal time, at a total cost of \$310 per submission. See PTO Supporting Statement under the Paperwork Reduction Act in [OMB Control No. 0651-0031 \(2020\)](#) (Item 32 in Tables 3,4 and 7).

The relative change of the “quantity demanded” q due to relative price increase p is given by $q = \varepsilon p$, where ε is the “price elasticity” coefficient. The PTO obtained price elasticity estimates for application fees (Filing/Search/Examination) of $\varepsilon = -0.16$, an estimate found to be independent of applicant entity size category.^[9] Accordingly, the relative change q in the “quantity demanded”—in the number of application filed—would be $q = -0.16 \times p = -2.7\%$, -5.5% , and -10.9% , for large, small, and micro entities respectively. These reductions in patent application filings entail real social costs manifest as reduced innovation. Clearly, there can be no justification for this negative impact, which would disproportionately adversely affect small and micro entities.

6. An alternative credible approach. If despite the objections discussed above, Congress insists on adopting a revision of the IDEA Act having the PTO collect the information, and if burdens are to be imposed on applicants, the effort must be done *the right way*. Data solely on the number of patents and applications at the PTO that merely characterize the numerical disparities in patenting would fail to inform any attempt to identify the *causal* determinants, or the *contributing* and confounding factors that *drive* such disparities in patenting. Explanatory factors for demographic disparities in patenting are often found at earlier stages, well before the filing at the PTO. For example, an empirical study in [the Quarterly Journal of Economics](#) provides strong evidence that exposure to innovation during childhood has significant causal effects on propensities to invent. Another determinant factor may involve the inventor’s level of STEM education in K-12. Still another major contributing factor may also be the [underrepresentation of women and minorities](#) in the science and engineering workforce, from which inventors emerge. The Act proposes to collect no background information on inventors that would even begin to shed light on any of the *causes* for, or *factors underlying* the disparities the data may reveal. Thus, contrary to the sponsors’ press release, the Act *would not* “provide us with information needed to better *understand and address* the patent disparities among women, people of color, and other underrepresented groups.” The Act’s mere revelation of numerical patenting disparities without more would achieve nothing of the kind.

A sound approach would collect pre-application background information from inventors such as data related to their experiences, education, research, mentorship, prior activities, etc. Only by having such inventor attributes *in addition to*, and *coupled with* their demographic information, can useful correlations and causal inferences be made on ways to *address* actual causes of disparities.

^[9] See PTO price elasticity estimates in Table 1, “[USPTO Section 10 Fee Setting--Description of Elasticity Estimates.](#)” (July 2019). Appendix to “[USPTO Setting and Adjusting Patent Fees during Fiscal Year 2020.](#)”

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The exact data to be collected from inventors should not be trivially selected on a political basis. Data to be collected relating to the factors and attributes that may be important predictors and essential explanatory factors for disparity should be determined prior to enactment by *experts* in technology, education, STEM training, and social sciences. A panel of experts at the National Academy of Sciences (“NAS”) should be assembled to identify the specific information to be collected. The NAS is the appropriate body because it is charged with providing independent, objective advice to the nation on such matters related to science and technology. Their task would be to design the research framework *as a whole*; to assess the feasibility and costs for collecting and analyzing the required information; and to formulate the charge for the inventors’ survey, instilling public confidence that it is driven solely by scientific expert considerations and not by agendas of activist groups, or political pressures on the agency head. In contrast, the IDEA Act as currently written authorizes collection of only demographic data and confers discretion to “determine as appropriate” collection of information in “any other demographic category” on the PTO, where no relevant institutional expertise to make such determination resides.

7. Conclusion. For the reasons explained above, I submit that enacting the IDEA Act as currently written is not a good “idea.” If enacted, it would harm the very inventors the Act seeks to benefit. The PTO should be kept free from any identity-based task, process, or reporting requirement. The fact that the sponsors of this bill are strong champions of small business inventors engenders hope that they will reconsider this Act, and redirect their efforts to having the NAS undertake the relevant study to determine the data to be collected, and focus on legislation that truly and prudentially restores U.S. patent rights to all demographic inventor groups.