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Promoting Patent Practitioner Diversity: Expanding Non-JD Pathways and Removing Barriers

Christopher M. Turoski

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Promoting Patent Practitioner Diversity: Expanding Non-JD Pathways and Removing Barriers

*Christopher M. Turoski**

ABSTRACT

The patent field suffers from a reciprocal problem: the cost of becoming a Registered Patent Attorney is high, and the diversity of the patent bar is low. The high cost of law school tuition (over \$50,000 per year at some schools) prices out individuals from less privileged backgrounds, thereby decreasing the number of diverse candidates who could become Registered Patent Attorneys. The relatively low number of students with science, technology, or engineering (STE) degrees also restricts the number of diverse candidates who could become Registered Patent Attorneys. These factors contribute to a lack of diversity in the patent bar, reflecting poorly on the profession. An estimated 30 percent of registered patent practitioners are women, and an even lower

* Professor Christopher M. Turoski is Director of Patent Programs at the University of Minnesota Law School. Turoski is an active patent practitioner, officially recognized by the USPTO as eligible to represent others in patent matters before the USPTO. The USPTO registered Turoski as a patent “agent” on February 16, 1999, and as a patent “attorney” on April 6, 1999. He is not a US government employee and is not recognized by the USPTO as having “reciprocity” under 37 CFR § 11.6(c). Turoski is a licensed attorney in both Minnesota and Wisconsin. Turoski is the president of the National Association of Patent Practitioners (NAPP).

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percentage are racial minorities. The United States is currently at a critical juncture in the fight against systemic racism. It is incumbent upon the patent ecosystem to increase racial and gender equity in the profession because it is simply the right thing to do. This Article recommends increasing the diversity of patent practitioners by: (1) expanding avenues for individuals who aspire to become patent practitioners but want to avoid the burdensome time and financial commitments of a traditional *Juris Doctorate (JD)* program which artificially raises the costs of patent legal services, and (2) removing systemic barriers these individuals face at the United States Patent and Trademark Office (USPTO). These actions should increase diversity in the patent profession. They should also provide an economic benefit by (i) increasing innovators' access to representation by patent practitioners and (ii) decreasing innovators' cost of patent protection through representation by lower-cost Registered Patent Agents.

TABLE OF CONTENTS

I.	EXPANDING INNOVATION THROUGH THE DIVERSITY OF THE US POPULATION	59
II.	PATHS TO BECOME A PATENT PRACTITIONER	62
	A. <i>JD Degree Path</i>	66
	1. Registered Patent Attorney	68
	2. Appearance Pro Hac Vice in PTAB Proceeding	69
	B. <i>Non-JD Degree Path</i>	71
	1. Registered Patent Agent	71
	2. Reciprocal Agent	73
	3. Former USPTO Employee	74
	4. Limited Recognition	76
III.	THE PATENT BAR SUFFERS FROM A LACK OF DIVERSITY ATTRIBUTABLE TO THE NARROW PATH TO BECOME A PATENT PRACTITIONER	77
IV.	OLD SOLUTIONS TO THE LACK OF DIVERSITY OF PATENT PRACTITIONERS	81
	A. <i>In the Schools</i>	81
	B. <i>In the Legal Community</i>	83
	C. <i>In the USPTO</i>	84
V.	NEW SOLUTIONS TO PROMOTE DIVERSITY OF PATENT PRACTITIONERS	86
	A. <i>Expanding Avenues for Those Who Aspire to Become Patent Practitioners</i>	86
	1. JD Degree Programs	89
	2. Non-JD Degree Programs	90

a. Undergraduate Degree Programs 91

b. Certificate Programs 93

c. LLM Degree Programs 95

d. MLS Degree Programs 97

e. MS Patent Law Degree Programs (A Case Study Example) 98

 1. Overview 100

 2. Time Commitment 100

 3. Financial Commitment 101

 4. Curriculum 101

 5. Experiential Opportunities 103

 6. Faculty 103

 7. Diversity 103

B. Removing Barriers Students Face at the USPTO 107

 1. Admission to Registration Examination with Student Visa 106

 2. Law School Clinic Certification Program 110

 3. Law School Patent Drafting Competition 113

VI. CONCLUSION 119

I. EXPANDING INNOVATION THROUGH THE DIVERSITY OF THE US POPULATION

The purpose of patent law is to foster innovation and economic growth.¹ In light of that purpose, the United States Patent and Trademark Office (USPTO) is developing a national strategy to expand the country’s innovation ecosystem “demographically, geographically, and economically.”² To help advance this strategy, the USPTO launched the National Council for Expanding American Innovation (NCEAI).³ The NCEAI is charged with “strategizing new ways to expand American innovation by tapping into the strength of the diversity of the US population and increasing the opportunities for all Americans to

1. See U.S. CONST. art. I, § 8, cl. 8 (“The Congress shall have Power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”).

2. Request for Comments on the National Strategy for Expanding American Innovation, 85 Fed. Reg. 83,906, 83,906 (Dec. 23, 2020) (“[T]he USPTO [will] develop a national strategy to build a more demographically, geographically, and economically inclusive innovation ecosystem.”).

3. *USPTO Launches National Council for Expanding American Innovation (NCEAI)*, U.S. PAT. & TRADEMARK OFF. (Sept. 14, 2020, 2:46 PM), <https://www.uspto.gov/about-us/news-updates/uspto-launches-national-council-expanding-american-innovation-nceai> [<https://perma.cc/SJ5P-EREF>].

participate in innovation.”⁴ The initiative seeks to build an inclusive, innovative economy which reflects the diversity of our nation, specifically increasing the involvement of women and other underrepresented groups.⁵ In developing the strategy, the USPTO and the NCEAI prioritized identifying “ways of promoting diversity in the corps of intellectual property attorneys and agents who represent innovators.” This issue is directly addressed in this Article.⁶

It is generally recognized the lack of diversity in the patent ecosystem stifles economic growth.⁷ The USPTO recently reported the share of women among all US inventor-patentees was only 12.8 percent in 2019, and patents with at least one woman inventor accounted for only 21.9 percent.⁸ Diversity gaps in invention and patenting prevent the United States from reaching its full economic potential.⁹ For example, it is estimated including more women and African Americans in the “initial stage of the process of innovation” would increase GDP by up to approximately \$943 billion (4.4 percent per capita).¹⁰ Diverse inventors will benefit from having the option to select representation from a diverse pool of patent practitioners.¹¹

4. *About the National Council for Expanding American Innovation*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/initiatives/expanding-innovation/national-council-expanding-innovation/about-national-council> [<https://perma.cc/GN9S-SRJC>] (Nov. 10, 2021, 7:48 AM).

5. *Id.*

6. Request for Comments on the National Strategy for Expanding American Innovation, 85 Fed. Reg. 83,906, 83,908.

7. *See The IDEA Act of 2021*, COMM. ON SMALL BUS., https://smallbusiness.house.gov/uploadedfiles/idea_act_one_pager.pdf [<https://perma.cc/6XY7-E2EK>] (last visited Nov. 7, 2021).

8. Andrew A. Toole, Charles A. W. deGrazia, Francesco Lissoni, Michelle J. Saksena, Katherine P. Black, Ernest Miguez & Gianluca Tarasconi, *Progress and Potential: 2020 Update on U.S. Women Inventor-Patentees*, OFF. OF THE CHIEF ECONOMIST 2 (July 2020), <https://www.uspto.gov/sites/default/files/documents/OCE-DH-Progress-Potential-2020.pdf> [<https://perma.cc/35DF-GF3T>].

9. Holly Fechner & Matthew S. Shapanka, *Closing Diversity Gaps in Innovation: Gender, Race, and Income Disparities in Patenting and Commercialization of Inventions*, 19 TECH. & INNOVATION J. 727, 732 (2018).

10. *Congress Should Pass the Idea Act to Promote Diversity and Inclusion in Inventing and Patenting*, INVENT TOGETHER 2 https://inventtogether.org/wp-content/uploads/2020/09/InventTogether_IDEA_Act_FactSheet.pdf [<https://perma.cc/LMJ7-F8AT>] (last visited Oct. 26, 2021); *see* Lisa Cook, *Addressing Gender and Racial Disparities in the U.S. Labor Market to Boost Wages and Power Innovation*, in BOOSTING WAGES FOR U.S. WORKERS IN THE NEW ECONOMY 112, 112–13 (2021).

11. *See, e.g.*, BigSpeak Speakers Bureau, *Sara Blakely - Keynote at 2012 NAPW National Networking Conference*, YOUTUBE (Mar. 20, 2017), <https://www.youtube.com/watch?v=KfiLYjPCxTc> [<https://perma.cc/3FQN-UMS8>].

This Article proposes two ways to increase the diversity of patent practitioners. First, this Article proffers to expand opportunities for those who aspire to become patent practitioners but want to avoid the burdensome time and financial commitments of a traditional law school degree program, which artificially raises the costs of patent legal services. Moreover, steps need to be taken to remove barriers individuals face at the USPTO. These actions would promote diversity in the patent profession and provide an economic benefit for innovators by: (1) increasing innovators' access to representation by patent practitioners as more individuals become Registered Patent Agents, and (2) decreasing innovators' cost of patent protection through representation by lower-cost Registered Patent Agents.

Registered Patent Agents perform many of the same functions as Registered Patent Attorneys.¹² The primary shared function of the two types of patent practitioners is representing innovators by protecting their inventions through the preparation and prosecution of patent applications before the USPTO.¹³ Registered Patent Agents typically bill at a lower rate and are paid a lower salary for this work compared with Registered Patent Attorneys.¹⁴ Accordingly, an increase in the number of Registered Patent Attorneys would broaden innovator's access to competent representation and decrease the cost those innovators face seeking to patent their inventions.¹⁵

Part II explores the various paths available for those seeking to become patent practitioners. Part III describes the problem of the lack of diversity in the corps of patent practitioners. Part IV describes past solutions to this problem. Finally, Part V recommends new solutions to promote the diversity of patent practitioners, specifically expanding avenues for those who aspire to become patent practitioners and removing barriers individuals face at the USPTO.

12. Adam Hayes, *Patent Attorney*, INVESTOPEDIA, <https://www.investopedia.com/terms/p/patent-attorney.asp> [<https://perma.cc/D3AU-RBYU>] (Oct. 1, 2020).

13. See Will Kenton, *Patent Agent*, INVESTOPEDIA, <https://www.investopedia.com/terms/p/patent-agent.asp> [<https://perma.cc/MX97-Q9RF>] (Aug. 11, 2021).

14. AM. INTELL. PROP. L. ASS'N, 2021 REPORT OF THE ECONOMIC SURVEY 12–14 (2021) [hereinafter 2021 REPORT] (finding that the average hourly billing rate of a patent agent at a private firm is \$322 compared to \$502 for all respondents).

15. See Mary T. Hannon, *The Patent Bar Gender Gap: Expanding the Eligibility Requirements to Foster Inclusion and Innovation in the U.S. Patent System*, 10 IP THEORY 1, 19 (2020).

II. PATHS TO BECOME A PATENT PRACTITIONER

The process to become a patent practitioner authorized to practice in patent matters before the USPTO is somewhat unique and difficult.¹⁶ This is because few individuals can meet the “scientific and technical” requirement (i.e., possessing an appropriate science, technology, or engineering (STE) degree) to become a patent practitioner.¹⁷ Despite this STE limitation, the definition of “patent practitioner” is relatively broad as defined in 37 C.F.R. § 11.1.¹⁸ This definition permits a variety of individuals to be authorized to practice in patent matters before the USPTO.¹⁹ These patent practitioners are typically categorized according to whether they obtained a JD degree (typically a US lawyer admitted to a state bar) or not (typically a US nonlawyer not admitted to a state bar).²⁰

A Registered Patent Attorney is one of six major types of patent practitioners.²¹ To become a Registered Patent Attorney, an individual must have a STE background, gain admission to a state bar, pass the Examination for Registration to Practice in Patent Cases before the USPTO (Registration Examination), and be a US citizen.²² In contrast, a lawyer who does *not* have a STE background (did *not* pass the Registration Examination, or is *not* a US citizen) may be recognized to appear pro hac vice as backup counsel in a proceeding before the Patent Trial and Appeal Board (PTAB).²³ Another type of patent practitioner is a Registered Patent Agent, who, unlike a Registered Patent Attorney, is *not* admitted to a state bar, but like a Registered Patent Attorney has

16. See *id.* at 3.

17. 37 C.F.R. § 11.7(a) (2021) (requiring registered individuals to possess legal, scientific, and technical qualifications).

18. *Id.* § 11.1.

19. See *Patent and Trademark Practitioners*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/learning-and-resources/patent-and-trademark-practitioners> [<https://perma.cc/R9T3-RWBW>] (last visited July 3, 2019, 8:29 AM).

20. *Inventors 101: Patent Attorney vs Patent Agent*, AMIR ADIBI: SF BAY AREA PATENT ATTORNEY (Oct. 21, 2018), <https://patentlawyer.io/patent-attorney-vs-patent-agent/> [<https://perma.cc/X997-A8C5>].

21. See 37 C.F.R. § 11.1.

22. *Id.*; 37 C.F.R. § 11.7.

23. 37 C.F.R. § 11.1 (“Practitioner means . . . [a]n individual authorized to practice before the Office in patent matters under § 11.9(a) or (b).”); *id.* § 11.9 (a)–(b) (explaining that an individual not registered under 37 C.F.R. § 11.6 may be given limited recognition to prosecute a specified patent application as an attorney or agent); *id.* § 41.5(a); *Who Can Appear in Patent Trials Before the USPTO Patent Trial and Appeal Board?*, FOLEY & LARDNER LLP (Nov. 9, 2012), <https://www.foley.com/en/insights/publications/2012/11/who-can-appear-in-patent-trials-before-the-uspto-p> [<https://perma.cc/5QQD-2KSX>].

a STE background and has passed the Registration Examination.²⁴ A “Reciprocal Agent” may be admitted to practice before the USPTO in certain circumstances *without* passing the Registration Examination if they are authorized to practice before a patent office in another jurisdiction (e.g., Canada).²⁵ A USPTO “Former Employee” may also be admitted to practice before the USPTO in certain circumstances *without* passing the Registration Examination.²⁶ And as a catch-all category, one may be granted “Limited Recognition” in special circumstances (for example, a non-US citizen resident who passes the Registration Examination, or a student in the USPTO Law School Clinic Certification Program).²⁷ The USPTO recognizes any individual who falls into these six categories as a patent practitioner recognized to practice in patent matters before the USPTO.²⁸

Table 1 shows each category of patent practitioner by admission type: a Registered Patent Attorney, one recognized to appear Pro Hac Vice before the PTAB, a Registered Patent Agent, a Reciprocal Agent, a Former Employee, and one with Limited Recognition.²⁹ The major requirements for one who aspires to become a patent practitioner are shown as rows in Table 1.³⁰

Table 1

Admission Type	Registered Patent Attorney	Pro Hac Vice	Registered Patent Agent	Reciprocal Agent	Former Employee	Limited Recognition
Regulation	37 C.F.R. § 11.6(a)	37 C.F.R. § 11.6(d)	37 C.F.R. § 11.6(b)	37 C.F.R. § 11.6(c)	37 C.F.R. § 11.7(d)	37 C.F.R. § 11.9
Scientific/ Technical	Yes	No	Yes	Yes	Yes	Yes
JD Degree	Yes	Yes	No	No	No	Yes (Attorney) No (Agent) No (Student)
Citizenship	US	Any	US	Non-US	US	Non-US
Registration Examination	Yes	No	Yes	No	No	Yes

24. 37 C.F.R. § 11.1 (“Practitioner means . . . [a]n attorney or agent registered to practice before the Office in patent matters.”); *Glossary*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/learning-and-resources/glossary> [https://perma.cc/BJS3-Z4WT] (last visited Nov. 22, 2021, 9:00 PM) (defining agent as “one who is not an attorney but is authorized to act for or in place of the applicant(s) before the Office, that is, an individual who is registered to practice before the Office”).

25. 37 C.F.R. §§ 11.1, 11.14(c), (f).

26. 37 C.F.R. § 11.7(d) (waiving the registration examination for former office employees).

27. *Id.* § 11.6(c).

28. *See id.* § 11.1. These six categories are not all official terms defined by the USPTO but are useful conceptualizations of the different kinds of patent practitioners, and non-exhaustive. *See id.*

29. *See id.* §§ 11.6(a)–(d), 11.7(d), 11.9.

30. *See* 37 C.F.R. § 11.7(a).

In almost all circumstances, an individual who aspires to become a patent practitioner must possess a STE undergraduate or graduate degree.³¹ Individuals possessing this scientific and technical qualification follow one of two main paths to become a patent practitioner: (1) a JD degree path, or (2) a non-JD degree path.³² An individual following the JD degree path typically obtains a JD degree from a US law school.³³ In contrast, an individual following the aptly named non-JD degree path typically forgoes obtaining a JD degree.³⁴ A majority of patent practitioners follow the JD degree path—as of 2021, 36,070 active Registered Patent Attorneys hold a JD degree versus 12,789 Registered Patent Agents (non-attorneys) in the practice of patent matters before the USPTO.³⁵

An individual following the JD degree path must take one of three sub-paths to become a patent practitioner.³⁶ First, most individuals follow a primary JD degree path, gaining admission to a state bar and passing the Registration Examination, culminating in the career outcome of becoming a Registered Patent Attorney.³⁷ Second, a minority of individuals follow a secondary JD degree path.³⁸ Individuals on this path are recognized to appear *pro hac vice* as backup counsel in a proceeding before the PTAB without sitting for the Registration Examination.³⁹ Third, in limited circumstances, an individual may proceed under a tertiary JD degree path.⁴⁰ An individual holding a JD degree may be granted Limited Recognition to prosecute a specified

31. See U.S. PAT. & TRADEMARK OFF., OFF. OF ENROLLMENT & DISCIPLINE, GENERAL REQUIREMENTS BULLETIN FOR ADMISSION TO THE EXAMINATION FOR REGISTRATION TO PRACTICE IN PATENT CASES BEFORE THE UNITED STATES PATENT AND TRADEMARK OFFICE 3–4 (2021), https://www.uspto.gov/sites/default/files/documents/OED_GRB.pdf [<https://perma.cc/2YD2-VZCU>] [hereinafter GENERAL REQUIREMENTS].

32. See *Do I Qualify?*, PATBAR, <https://www.patbar.com/?s=info-about-the-exam&pg=do-i-qualify> [<https://perma.cc/X2GW-CSAF>] (last visited Oct. 26, 2021).

33. See *What Does a Patent Lawyer Do: Everything You Need to Know*, UPCOUNSEL, <https://www.upcounsel.com/what-does-a-patent-lawyer-do> [<https://perma.cc/N32Z-VLV4>] (July 7, 2020).

34. See 37 C.F.R. §§ 11.6(b), 11.7(l) (“An agent registered under § 11.6(b) may request registration as an attorney under § 11.6(a). The agent shall demonstrate his or her good standing as an attorney and pay the fee required by § 1.21(a)(2)(iii) of this chapter.”).

35. See *Patent Practitioner Home Page*, U.S. PAT. & TRADEMARK OFF., <https://oedci.uspto.gov/OEDCI/practitionerhome.jsp> [<https://perma.cc/R6MT-SX2R>] (Jan. 3, 2022).

36. See 37 C.F.R. §§ 11.6, 11.7.

37. See 37 C.F.R. §§ 11.6(a), 11.7(a).

38. See Scott McKeown, *Revised Pro Hac Vice Policy of the PTAB*, ROPES & GRAY (Aug. 20, 2012), <https://www.patentspostgrant.com/revised-pro-hac-vice-policy-of-the-ptab/> [<https://perma.cc/3CW3-DAW2>].

39. See 37 C.F.R. §§ 11.6(d), 41.5(a).

40. See 37 C.F.R. § 11.9.

patent application(s) before the USPTO.⁴¹ Another limited circumstance of this tertiary JD degree path includes a JD degree-seeking student who the USPTO grants Limited Recognition under the USPTO Law School Clinic Certification Program.⁴²

In contrast to obtaining a JD degree, an individual may instead follow the non-JD degree path.⁴³ An individual following the non-JD degree path follows one of four sub-paths to become a patent practitioner.⁴⁴ First, most individuals follow a path of forgoing a JD degree, pass the Registration Examination, and ultimately become a Registered Patent Agent.⁴⁵ Second, some individuals follow a path as a Former Employee of the USPTO and ultimately become a Registered Patent Agent.⁴⁶ Third, a handful of individuals who are registered before the patent office of a country outside the United States (e.g., Canada), in which he or she resides and practices, may follow a path to become a Reciprocal Agent.⁴⁷ Fourth, a small handful of individuals follow a path with the career outcome to become recognized with Limited Recognition.⁴⁸

As shown in Table 1, there are several requirements an individual must overcome in each path to obtain approval from the Office of Enrollment and Discipline (OED) and be officially recognized to practice in patent matters before the USPTO as a patent practitioner.⁴⁹ These requirements include: (1) obtaining an undergraduate education in a field recognized to meet certain scientific and technical qualifications, (2) optionally obtaining a JD degree, (3) establishing US citizenship or permanent residency, and (4) successfully passing the Registration Examination.⁵⁰

The first requirement involves establishing whether an individual meets the scientific and technical qualifications to practice

41. *Id.* § 11.9(a).

42. *See USPTO to Expand Law School Clinic Certification Program*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/about-us/news-updates/uspto-expand-law-school-clinic-certification-program-1> [<https://perma.cc/UY8Q-RXTK>] (June 1, 2021, 9:58 AM).

43. *See* 37 C.F.R. § 11.6(b).

44. *See id.* §§ 11.6–11.9.

45. *See* 37 C.F.R. § 11.7(b).

46. *See id.* § 11.7(d)(3).

47. *See id.* § 11.6(c).

48. *See id.* § 11.9.

49. *See id.* § 11.7(a).

50. *See, e.g., id.* §§ 11.6(a), 11.7(a)(1)–(b)(2)(ii). *See generally Becoming a Patent Practitioner*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/learning-and-resources/patent-and-trademark-practitioners/becoming-patent-practitioner> [<https://perma.cc/ZMS3-E5YU>] (Dec. 8, 2021, 12:40 PM) (providing information “about applying for registration to practice in patent matters before the USPTO, including requirements, forms, and exam information”).

before the USPTO.⁵¹ This requirement is typically satisfied by obtaining an undergraduate education degree in a STE field (excluding mathematics).⁵² The second requirement involves, optionally, procuring a JD degree from a US law school.⁵³ This requirement is what differentiates a Registered Patent Attorney from a Registered Patent Agent.⁵⁴ The third requirement involves establishing one's status as either a US citizen or a non-US citizen.⁵⁵ The fourth requirement involves sitting for and passing the Registration Examination.⁵⁶ These four requirements are described more fully with reference to Table 1 in Sections II.A.1–A.3 and II B.1–B.3 below.

A. JD Degree Path

It is traditional for an individual, whether possessing a STE or non-STE degree, to follow the JD degree path.⁵⁷ This path includes attending a US law school and obtaining a JD degree.⁵⁸ The decision to attend law school itself is an initial hurdle aspiring patent practitioners must overcome. There are two aspects to that hurdle: awareness and cost.⁵⁹ First, common sense dictates individuals can only follow this

51. See 37 C.F.R. § 11.7(a).

52. See Administrative Updates to the General Requirements for Admission to the Examination for Registration to Practice in Patent Cases Before the United States Patent and Trademark Office, 86 Fed. Reg. 52,652, 52,653 (Sept. 22, 2021) (noting that the USPTO has broadened the types of degrees and degree fields that will satisfy the requirements to become a Registered Patent Agent or attorney). See generally GENERAL REQUIREMENTS, *supra* note 31 (detailing the degrees and degree fields that will satisfy the requirements to become a Registered Patent Agent or attorney).

53. *What Does a Patent Lawyer Do: Everything You Need to Know*, *supra* note 33.

54. ADIBI, *supra* note 20.

55. *Becoming a Patent Practitioner*, *supra* note 50.

56. See *id.*

57. See Robert Brammer, *How to Become a Lawyer Without Going to Law School*, LIBR. OF CONG. (Feb. 24, 2020), <https://blogs.loc.gov/law/2020/02/how-to-become-a-lawyer-without-going-to-law-school/> [<https://perma.cc/G5X5-BE76>].

58. See *What Is a JD Degree?*, LAWYEREDU.ORG, <https://www.lawyeredu.org/what-is-a-juris-doctorate-degree.html> [<https://perma.cc/QH4Y-GAUB>] (last visited Oct. 26, 2021).

59. See Elaine Spector & LaTia Brand, *Diversity in Patent Law: A Data Analysis of Diversity in the Patent Practice by Technology Background and Region*, LANDSLIDE, Sept./Oct. 2020, at 32, 37 (“Oftentimes, women and minority engineers do not consider a career in law because they do not know that one exists. In fact, many engineers are unaware that a degree in engineering or a hard science provides them with the opportunity to sit for the patent bar exam. Most are also typically unaware that they can practice patent law without a law degree as a Registered Patent Agent.”); see also Clifford Winston & Quentin Karpilow, *Should the US Eliminate Entry Barriers to the Practice of Law? Perspectives Shaped by Industry Deregulation*, 106 AM. ECON. REV. 171, 171 (2016) (explaining the barriers to entry into the legal field, including the exclusivity of exorbitant prices of law schools).

path if they have some awareness of the legal profession.⁶⁰ Perhaps one of their parents is a lawyer, they know a lawyer, or they have a general awareness of lawyers and the legal profession from some personal, professional, or academic experience in their life.⁶¹ For many people, however, this is not the case.⁶² That lack of awareness prohibits many people who could be valuable practitioners from entering the profession.⁶³

Exposure to the legal profession is also likely influential for individuals in justifying the cost of law school. Tuition continues to climb at US law schools,⁶⁴ and the cost of a law school education could exceed \$150,000.⁶⁵ This high cost, coupled with the opportunity cost of attending three more years of school rather than entering a potentially lucrative post-graduation job in STE, dissuades more risk-averse individuals from entering the legal profession.⁶⁶ This reality could be especially true for students coming from disadvantaged backgrounds

60. See Spector & Brand, *supra* note 59.

61. See Braxton Davis, *Why the Lack of Diversity & Inclusion in the Patent Profession?*, NAT'L COUNCIL ON PAT. PRACTICUM (Sept. 2, 2020), <https://thencpp.org/why-the-lack-of-diversity-inclusion-in-the-patent-profession/> [<https://perma.cc/6BPP-P5UY>] (“[M]ost of us minority patent attorneys are first-generation engineers and attorneys and only happened to stumble upon patent law by happenstance. We did not have the luxury of a lineage of familial attorneys telling us that we had to obtain a science or engineering degree to be a patent prosecutor, or what engineering majors are best for this profession, or that life sciences jobs in this field require at least a Master’s degree and, more often than not, a PhD.”).

62. See Staci Zaretsky, *Children of Lawyers 17 Times More Likely to Become Lawyers*, ABOVE THE L. (Apr. 1, 2019, 2:14 PM), <https://abovethelaw.com/2019/04/children-of-lawyers-17-times-more-likely-to-become-lawyers/> [<https://perma.cc/X2QG-SRPH>].

63. See Spector & Brand, *supra* note 59.

64. See *Law School Costs*, L. SCH. TRANSPARENCY, <https://data.lawschooltransparency.com/costs/tuition/> [<https://perma.cc/L5TD-XGJB>] (last visited Oct. 26, 2021). However, individuals continue to seek admission to law school. See *YTD ABA 2021 Applicant and Application Counts*, L. SCH. ADMISSION COUNCIL, <https://report.lsac.org/VolumeSummaryOriginalFormat.aspx> [<https://perma.cc/7GB3-YHF7>] (last visited Oct. 26, 2021) (reporting that, as compared to one year ago, current year applicants are up 21 percent, and as compared to two years ago, current year applicants are up 20.7 percent).

65. *Paying for Law School: A Preliminary Guide*, LAW SCH. ADMISSIONS COUNCIL 2 (July 2019), <https://www.lsac.org/sites/default/files/media/financial-aid-brochure-2019.pdf#:~:text=LSAC.org%20provides%20links%20to,more%20than%20%2450%2C000%20a%20year> [<https://perma.cc/49QS-AMEF>].

66. See Winston & Karpilow, *supra* note 59; Muireann Bolger, *Promoting Gender Diversity at the US Patent Bar*, WORLD INTELL. PROP. REV.: DIVERSITY (2021), <https://newtonmedia.foleon.com/worldipreview/diversity-2021/promoting-gender-diversity-at-the-us-patent-bar/> [<https://perma.cc/JFS5-36QD>] (“[O]ne of the main barriers to achieving greater diversity at the Patent Bar is economic—rather than any systemic flaw within the office’s qualifications criteria.”). The cost of becoming a patent attorney is simply prohibitive for many potentially excellent candidates. See *Paying for Law School: A Preliminary Guide*, *supra* note 65. For example, pursuing a Juris Doctorate can cost in excess of \$150,000 in tuition before scholarship. *Id.*

who have less access to financial resources, have to support family members, or worry about upward mobility.⁶⁷

Awareness and cost of law school are serious barriers which narrow the pipeline of potential patent practitioners.⁶⁸ For individuals embarking on this JD degree path, awareness of the legal profession and law school tuition are only the beginning obstacles to becoming a patent practitioner, as described more fully below.⁶⁹

1. Registered Patent Attorney

As a preliminary but important matter, an individual seeking to become a Registered Patent Attorney must obtain a Bachelor of Science (BS) (or less frequently, a Bachelor of Arts (BA)) degree in a STE field to meet the scientific and technical qualifications requirement.⁷⁰

For individuals who possess an underlying STE degree, the most well-known education path to become a patent practitioner is the primary JD degree path.⁷¹ As shown in Table 1, an individual following this primary JD degree path must pursue and obtain a JD degree at a US law school.⁷² This is a costly endeavor in terms of time and money and dissuades many otherwise qualified and diverse individuals from becoming patent practitioners.⁷³

Further, the individual must establish that they possess US citizenship.⁷⁴ While this is not an active consideration facing most aspiring patent practitioners, it is an important box to check to determine the appropriate sub-path to take.⁷⁵ In some instances, a non-US citizen may become a Registered Patent Attorney (e.g., by

67. See Matthew Lynch, *Why Low-Income Kids Are Nowhere to Be Found in STEM*, EDVOCATE (Nov. 16, 2017), <https://www.theedadvocate.org/low-income-kids-nowhere-found-stem/> [<https://perma.cc/6VZ7-GGKE>].

68. See Spector & Brand, *supra* note 59; Winston & Karpilow, *supra* note 59.

69. See Davis, *supra* note 61; *infra* Part III–IV.

70. See 37 C.F.R. § 11.6(a) (2021) (authorizing attorneys who are US citizens and attorneys who are aliens to become registered patent attorneys); GENERAL REQUIREMENTS, *supra* note 31, at 3.

71. See *Everything You Need to Know About Becoming an Intellectual Property Lawyer*, NEW ENG. L. BOS., <https://www.nesl.edu/blog/detail/everything-you-need-to-know-about-becoming-an-intellectual-property-ip-lawyer> [<https://perma.cc/B2WQ-ALCD>] (last visited Oct. 26, 2021).

72. See *id.*; *supra* Table 1.

73. See Winston & Karpilow, *supra* note 59.

74. See 37 C.F.R. § 11.6(a).

75. See *Those Who Are Ineligible for the Patent Bar*, IP WATCHDOG, <https://www.ipwatchdog.com/patent-bar-exam/patent-bar-ineligible/> [<https://perma.cc/8KYN-8VCY>] (last visited Oct. 26, 2021); 37 C.F.R. § 11.6(e).

possessing a green card or H1B visa).⁷⁶ Otherwise, a non-US citizen holding a JD degree who aspires to become a patent practitioner must follow an alternative path such as that to Limited Recognition.⁷⁷

Finally, individuals must sit for and pass the Registration Examination.⁷⁸ This is a serious investment in time and effort, especially considering more individuals fail than pass the Registration Examination.⁷⁹ The low passage rate may dissuade some individuals who cannot afford to take the Registration Examination multiple times.⁸⁰ If the individual passes the Registration Examination and all other ancillary requirements are met, the OED recognizes the individual as a Registered Patent Attorney authorized to practice in patent matters before the USPTO.⁸¹

2. Appearance Pro Hac Vice in PTAB Proceeding

While becoming a Registered Patent Attorney is the most common career outcome on the JD degree path, it is not the only career outcome.⁸² A less common, secondary JD degree path exists for an individual holding a JD degree to appear pro hac vice before the PTAB in patent matters.⁸³ Every patent practitioner is registered to practice in a proceeding before the PTAB.⁸⁴ In addition, those with a JD degree may appear before the PTAB in certain situations upon a showing of good cause.⁸⁵ The PTAB has appellate jurisdiction over ex parte proceedings reviewing adverse decisions of examiners upon applications for patents.⁸⁶ The PTAB has original jurisdiction over the

76. See 37 C.F.R. § 11.6(a). Only US citizens or permanent residents can be registered to practice law in patent matters as an attorney before the USPTO. *See id.*

77. See *Becoming a Patent Practitioner*, *supra* note 50.

78. *See id.*

79. See *Registration Exam Results and Statistics*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/learning-and-resources/patent-and-trademark-practitioners/registration-exam-results-and-statistics> [<https://perma.cc/5YJP-UG96>] (Oct. 4, 2021, 1:44 PM).

80. See *About the Patent Bar Exam*, PAT. EDUC. SERIES, <https://www.patenteducation-series.com/exam/exam-details.html> [<https://perma.cc/794G-V3BU>] (last visited Oct. 26, 2021).

81. See *Becoming a Patent Practitioner*, *supra* note 50.

82. See 37 C.F.R. § 41.5(a) (2021) (“The Board may authorize a person other than a registered practitioner to appear as counsel in a specific proceeding.”); *see also id.* § 42.10(c) (“The Board may recognize counsel pro hac vice during a proceeding upon a showing of good cause, subject to the condition that lead counsel be a registered practitioner and to any other conditions as the Board may impose.”).

83. See 37 C.F.R. §§ 11.6(d), 41.5(a), 42.10.

84. See 37 C.F.R. § 11.5(a).

85. *Id.* §§ 41.5(a), 42.10(c).

86. See *Patent Trial and Appeal Board*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/patents/ptab> [<https://perma.cc/DJ2K-VWW5>] (Nov. 12, 2021, 12:54 PM).

four contested proceedings, namely: inter partes review, post-grant review, covered business method patent review, and derivation proceedings.⁸⁷

This secondary JD degree path may be followed, for example, by a patent litigator who does not hold an underlying STE degree.⁸⁸ The litigator may hold an undergraduate BS or BA degree in any field, such as art, poetry, English, politics, etc.⁸⁹ Since the litigator is merely “appearing” before the PTAB, the litigator need not fulfill the scientific and technical qualifications requirement of 37 C.F.R. § 11.7(a)(ii).⁹⁰ Rather the litigator must show their experience litigating and familiarity with the subject matter at issue in the PTAB proceeding.⁹¹

In contrast to other patent practitioners, those appearing pro hac vice in a PTAB proceeding need not show they possess US citizenship.⁹² Also, in contrast to other patent practitioners, those appearing pro hac vice in a PTAB proceeding need not sit for and pass the Registration Examination.⁹³

Factors limiting the number of aspiring patent practitioners who can follow this secondary JD degree path include: (1) lack of awareness of the path itself, and (2) filing a motion for admission pro hac vice.⁹⁴ Few law students will have heard of PTAB proceedings and be aware a non-Registered Patent Attorney can be admitted in such proceedings.⁹⁵

87. See *id.*

88. See Krista L. Cox, *So You Want to Be an IP Lawyer Without a Technical Background (Part 1)*, ABOVE THE L. (Sept. 14, 2017, 1:05 PM), <https://abovethelaw.com/2017/09/so-you-want-to-be-an-ip-lawyer-without-a-technical-background-part-1/> [<https://perma.cc/3GDN-PX6X>]; see also Ben Snitkoff, *Stranger in a Strange Land – USPTO Clarifies Rules for Pro Hac Vice Admission*, TROUTMAN PEPPER: POSTGRANT-COUNSEL BLOG (Oct. 25, 2013), <https://www.postgrant-counsel.com/2013/10/25/stranger-in-a-strange-land-uspto-clarifies-rules-for-pro-hac-vice-admission/> [<https://perma.cc/S2W5-AVA2>] (explaining that an experienced litigating attorney who is not a patent practitioner may be permitted to appear pro hac vice in patent matters).

89. See Cox, *supra* note 88.

90. See Snitkoff, *supra* note 88.

91. See 37 C.F.R. § 42.10 (“[A] motion to appear pro hac vice by counsel who is not a registered practitioner may be granted upon showing that counsel is an experienced litigating attorney and has an established familiarity with the subject matter at issue in the proceeding.”).

92. See *In re Griffiths*, 413 U.S. 717, 722–29 (1973) (ruling unconstitutional a state citizenship requirement for bar admission).

93. See 37 C.F.R. § 42.10(c) (2021).

94. See *Unified Patents, Inc. v. Parallel Iron, LLC*, No. IPR2013-00639 (P.T.A.B. Oct. 15, 2013); cf. *QSC Audio Products, Inc. v. Crest Audio, Inc.*, No. IPR2014-00127 (P.T.A.B. Dec. 23, 2014) (denying the Petitioner’s unopposed motion for pro hac vice admission because the affidavit in support of the motion failed to meet certain requirements).

95. See Amanda Leckman & S. Christian Platt, *PTAB/TTAB Hearings May Be Coming to a Law School Near You*, JONES DAY: PTAB LITIG. BLOG (Sept. 19, 2018), <https://www.ptablitigationblog.com/ptab-ttab-hearings-may-be-coming-to-a-law-school-near-you/> [<https://perma.cc/LGD8-C4DX>].

For those aware of the possibility, gaining admission to partake in a PTAB proceeding can be a lengthy and dissuading process.⁹⁶

B. Non-JD Degree Path

It is unusual for an individual with an underlying STE undergraduate or graduate degree to follow a non-JD degree path to bypass law school and become a nonlawyer patent practitioner (i.e., Registered Patent Agent, Reciprocal Agent, Former Employee, or one with Limited Recognition).⁹⁷ Each year, an estimated 331,000 students graduate from a university with a STE undergraduate degree.⁹⁸ However, fewer than 2,500 JD and non-JD students *combined* sit for the Registration Examination each year.⁹⁹ For example, only 460 applicants applied for the Registration Examination and were registered as a Registered Patent Agent over a 531-day period from October 19, 2019 to April 2, 2021.¹⁰⁰

1. Registered Patent Agent

An individual holding an underlying STE degree is oftentimes unaware they may follow the little-known non-JD degree path to become a patent practitioner, which results in the career outcome of being a Registered Patent Agent.¹⁰¹ The rate-limiting step on this path is obtaining a BS degree in a STE field.¹⁰² This non-JD degree path

96. *Cf. Legal Experience and Advancement Program (LEAP)*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/patents/ptab/leap> [<https://perma.cc/CNR6-LDJW>] (Aug. 17, 2021, 10:39 AM) (describing a new program that grants up to fifteen minutes of additional oral argument time and provides training and oral advocacy opportunities for less experienced advocates to gain practical experience in proceedings before the PTAB).

97. *See Patent Agent vs Patent Attorney: Everything You Need to Know*, UPCOUNSEL, <https://www.upcounsel.com/patent-agent-vs-patent-attorney> [<https://perma.cc/3RV2-R5C6>] (Nov. 9, 2020).

98. INSTITUTE OF EDUCATION SCIENCES: NATIONAL CENTER FOR EDUCATION STATISTICS, STATUS AND TRENDS IN THE EDUCATION OF RACIAL AND ETHNIC GROUPS 2018, 156 (2019) (reporting 331,000 of the 1.8 million bachelor's degrees awarded in 2015 and 2016 were in STEM fields).

99. *Registration Exam Results and Statistics*, *supra* note 79 (reporting 1,616 candidates were admitted to the Registration Examination in 2020, and fewer than 2,500 candidates were admitted to the USPTO Examiner in any of years between 2015 and 2020).

100. *See* Christopher M. Turoski, *We Need Reliable Data On Patent Agent, Atty Gender Diversity*, LAW360 (June 24, 2021, 4:19 PM), <https://www.law360.com/articles/1395642/we-need-reliable-data-on-patent-agent-atty-gender-diversity> [<https://perma.cc/NB6E-F66G>].

101. *Cf.* 37 C.F.R. § 11.6(b) (2021) (authorizing US citizens and alien non-attorneys to become registered patent agents); *Transitioning from Engineering to a Career as a Patent Agent*, PAT. EDUC. SERIES (June 4, 2021), <https://www.patenteducationseries.com/patent-bar/transitioning-from-engineering-to-a-career-as-a-patent-agent.html> [<https://perma.cc/4PP8-JMJG>].

102. *See Transition from Engineering to a Career as a Patent Agent*, *supra* note 101.

provides much less resistance than the JD degree path to become a patent practitioner.¹⁰³ Unfortunately, however, only about one-fourth of all patent practitioners follow this path.¹⁰⁴

These individuals, like a Registered Patent Attorney, must meet the scientific and technical qualifications requirement by simply possessing a BS degree in a STE field.¹⁰⁵ Oftentimes, the individual voluntarily obtains further scientific and technical education in their STE field, such as a Master of Science (MS) or Doctor of Philosophy (PhD) degree.¹⁰⁶ Although no advanced degree, master's degree, law degree, certificate, or any other technical training is required to become a Registered Patent Agent.¹⁰⁷

As shown in Table 1, an individual following the Registered Patent Agent non-JD degree path forgoes obtaining a JD degree.¹⁰⁸ This may have the advantage of reducing the time and cost of law school education.¹⁰⁹ Another advantage of this path is the individual's technical skills and education (e.g., PhD in chemistry) do not go stagnant during a three-year diversion in law school seeking to obtain a JD degree.¹¹⁰ However, the individual must also establish that they possess US citizenship.¹¹¹ If US citizenship is not established, then the individual must follow a path to become a Reciprocal Agent, Former Employee, or one with Limited Recognition.¹¹² Finally, like a Registered

103. *See id.*

104. *See Patent Practitioner Home Page*, U.S. PAT. & TRADEMARK OFF., <https://oedci.uspto.gov/OEDCI/practitionerhome.jsp> [<https://perma.cc/8V9U-R872>] (Nov. 13, 2021) (reporting that there are 12,898 active agents and 36,163 active attorneys authorized to practice in patent matters before the USPTO).

105. *Inventors 101: Patent Attorney vs. Patent Agent*, *supra* note 20.

106. *See id.*

107. *See* Christina Szalinski, *Nontraditional Science Careers: Patent Agent*, ACSB (Nov. 4, 2013), <https://www.ascb.org/careers/nontraditional-science-careers-patent-agent/> [<https://perma.cc/7S62-HMBL>]; *cf.* Setting and Adjusting Patent Fees during Fiscal Year 2020, 85 Fed. Reg. 46,932, 46,942 (Aug. 3, 2020) (to be codified at 37 C.F.R. pt. 1, 11, 41, 42) (“The USPTO does plan to pursue procedures to allow patent practitioners to voluntarily certify whether they have completed a minimum amount of continuing legal education (CLE). The USPTO further expects that registered practitioners who certify that they have completed such CLE will be recognized in the online practitioner directory. In the near future, the USPTO plans to issue proposed guidelines regarding such voluntary CLE certification, with a request for public comments.”).

108. *See* Szalinski, *supra* note 107.

109. *See* Winston & Karpilow, *supra* note 59 (“[M]any capable individuals are either unwilling or unable to spend three years in law school and graduate with debts that can easily exceed \$150,000.”).

110. *See id.*

111. *See* 37 C.F.R. § 11.6(b) (2021) (“Any citizen of the United States who is not an attorney, and who fulfills the requirements of this part may be registered as a patent agent to practice before the Office.”).

112. *See id.* § 11.6(b)–(c).

Patent Attorney, the individual is required to sit for and pass the Registration Examination.¹¹³ If the individual meets all other ancillary requirements, the OED will then recognize the individual as a Registered Patent Agent authorized to practice in patent matters before the USPTO.¹¹⁴

2. Reciprocal Agent

Only a handful of individuals follow the non-JD degree path to become a Reciprocal Agent.¹¹⁵ One defining characteristic of a Reciprocal Agent is the individual must be recognized to practice patent law before a patent office in the country of their residence (e.g., a patent agent practicing before the Canadian Intellectual Property Office).¹¹⁶ Further, the non-US patent office must allow substantially reciprocal privileges to those admitted to practice before the USPTO.¹¹⁷ This is a rate-limiting step on this path.¹¹⁸ For example, only about 800 active agents with residence in Canada are listed on the USPTO register of active patent practitioners as eligible to represent others before the USPTO in patent matters.¹¹⁹

As shown in Table 1 above, an individual following this path must establish they possess the requisite scientific and technical qualifications.¹²⁰ This requirement is typically fulfilled by obtaining a BS degree or equivalent in a STE field.¹²¹ Most frequently, the technical degree is pursued at a non-US educational institution (e.g., in the individual's home country, such as Canada).¹²² However, the technical degree may also be pursued at a US institution.¹²³ An individual

113. *Patent and Trademark Practitioners*, *supra* note 19.

114. *Id.*

115. *See Find a Patent Practitioner*, U.S. PAT. & TRADEMARK OFF., <https://oedci.uspto.gov/OEDCI/practitionerSearchEntry#roster> [<https://perma.cc/HJW8-FSM6>] (Nov. 13, 2021); 37 C.F.R. § 11.6(c). The typical student who follows this path is a patent attorney practicing before a patent office in a foreign jurisdiction. *See* 37 C.F.R. § 11.14(c).

116. *See* 37 C.F.R. § 11.6(c).

117. *Id.* The greatest impact the USPTO could make supporting a student on this path is identifying or lobbying other patent offices to permit substantially reciprocal privileges to those admitted to practice before the USPTO. For further discussions of ways the USPTO can support students on the non-JD paths, see *infra* Section V.

118. *See Find a Patent Practitioner*, *supra* note 115.

119. *Id.* This number may be inflated because it may include patent practitioners who are US citizens and simply reside in Canada. *See id.* (select “Practitioner Search”; then select “Canada” as the country and exclude “limited recognition”; then click “search”).

120. *See supra* Table 1.

121. *See* 37 C.F.R. § 11.7(a)(1)(ii); GENERAL REQUIREMENTS, *supra* note 31, at 3.

122. *See* GENERAL REQUIREMENTS, *supra* note 31, at 3.

123. *Id.*

following this non-JD degree path forgoes obtaining a JD degree from a US law school, but may study law in their home country (e.g., Canada).¹²⁴

Reciprocal agents are neither US citizens nor residents of the United States.¹²⁵ They are typically Canadian citizens residing in Canada.¹²⁶ Reciprocal Agents do not sit for the Registration Examination.¹²⁷ Rather, the Registration Examination requirement is satisfied if the USPTO determines that the individual is registered and in good standing before the patent office of the country in which he or she resides.¹²⁸ If the individual meets these and all other ancillary requirements, the OED will recognize the individual for a limited period as a patent agent with reciprocal recognition authorized to practice in certain patent matters before the USPTO.¹²⁹

3. Former USPTO Employee

A highly specialized and somewhat burdensome path for an individual to become a patent practitioner follows the non-JD degree path and results in becoming a patent practitioner by virtue of being a USPTO Former Employee.¹³⁰ Distinguishing characteristics of this path are: (1) the path is only available to certain USPTO Former employees, and (2) the Registration Examination is waived.¹³¹

An individual who takes advantage of this path must be a former employee in the USPTO examining corps or Office of Patent Legal Administration.¹³² An example of an individual in the USPTO examining corps is a patent examiner.¹³³ The USPTO currently employs 8,434 patent examiners and actively recruits and hires for this

124. See 37 C.F.R. § 11.6(b)–(c).

125. See *id.* § 11.6(c).

126. See TMEP § 602.03 (July 2021) (“Currently, a Canadian trademark attorney or agent who is registered and an active member in good standing with the Canadian Intellectual Property Office is the only foreign attorney or agent who may be recognized as meeting the . . . criteria [to become a reciprocal agent].”).

127. See 37 C.F.R. § 11.6(c).

128. See *id.*

129. See *id.* Matters are limited to “practice before the Office for the limited purpose of presenting and prosecuting patent applications of applicants located in such country” under 37 C.F.R. § 11.6(c).

130. See 37 C.F.R. §§ 11.6(b), 11.7(a)–(d).

131. See *id.*

132. See *id.*

133. See *id.*

position.¹³⁴ A patent examiner processes patent applications and determines whether a patent can be granted.¹³⁵ An entry-level patent examiner is a government employee with a pay scale and grade of GS-07–09 (salary \$57,641 to \$87,464 per year).¹³⁶ Higher-level examiners include a GS-14 primary examiner, a GS-15 Supervisory Patent Examiner, or a member of the Senior Executive Service (SES) serving as a tech director.¹³⁷

Like most patent practitioners, an individual on this path must meet the scientific and technical requirements shown in Table 1.¹³⁸ This requirement is typically met with ease because patent examiners often hold a bachelor's degree in engineering or science, which is a minimum job requirement for patent examiners (except design patent examiners).¹³⁹ Likewise, USPTO patent examiner jobs are only open to US citizens and nationals, so former patent examiners typically meet the US citizenship requirement.¹⁴⁰ Importantly, the former patent examiner does not need to obtain a JD degree to continue on this path.¹⁴¹ Most patent examiners are not lawyers.¹⁴² However, some patent examiners attend law school (e.g., part-time, night school) or become patent examiners after graduating from law school.¹⁴³

134. *Performance and Accountability Report*, U.S. PAT. & TRADEMARK OFF. 17 (2020), <http://www.uspto.gov/sites/default/files/documents/USPTOFY20PAR.pdf> [https://perma.cc/UYT6-9VE2]. In 2020 alone, the USPTO hired new 500 patent examiners. *Id.* at 68.

135. *Become a Patent Examiner*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/jobs/become-patent-examiner> [https://perma.cc/9TJW-4N5K] (Nov. 4, 2021, 6:20 AM).

136. U.S. PAT. & TRADEMARK OFF., PATENT EXAMINER RECRUITING BROCHURE 4 (2021), https://www.uspto.gov/sites/default/files/documents/PatentExaminer_brochure2021_downloadable.pdf [https://perma.cc/GT7E-YHKV] [hereinafter PATENT EXAMINER BROCHURE]; see *Become a Patent Examiner*, *supra* note 135 (reporting that the annual starting salary for most patent examiners ranges from \$57,071 to \$86,601).

137. See PATENT EXAMINER BROCHURE, *supra* note 136.

138. GENERAL REQUIREMENTS, *supra* note 31, at 3.

139. See *Become a Patent Examiner*, *supra* note 135. A degree equivalent to a bachelor's degree in engineering or science is also acceptable. *Id.*

140. See, e.g., *Patent Examiner (Electrical Engineer)*, USAJOBS, <https://www.usajobs.gov/GetJob/ViewDetails/589635000> [https://perma.cc/5MD5-9WG9] (last visited Oct. 28, 2021) (requiring applicants to be US citizens or nationals); see also *Employment of U.S. Citizens*, USAJOBS, <https://www.usajobs.gov/Help/working-in-government/us-citizens/> [https://perma.cc/U7WD-GCHB] (last visited Oct. 28, 2021) (“When a job is open to ‘all U.S. citizens’, it means anyone with U.S. citizenship, or who is a national . . . may apply.”).

141. See 37 C.F.R. § 11.6(b) (2021).

142. Robert Lichter & Ryan Potts, *Patent Office Insights from Two Former Examiners*, IPWATCHDOG.COM (July 21, 2020), <https://www.ipwatchdog.com/2020/07/21/patent-office-insights-two-former-examiners/id=123414/> [https://perma.cc/7RF3-VMBQ].

143. *The Inside Scoop from a USPTO Patent Examiner*, LEXISNEXIS (Dec. 19, 2018), <https://www.lexisnexisip.com/knowledge-center/the-inside-scoop-from-a-uspto-patent-examiner/> [https://perma.cc/ZK8H-QFC5].

In general, after serving as a patent examiner for a period of time and separating from the USPTO, the former employee may request a waiver of the Registration Examination.¹⁴⁴ This avenue is somewhat opaque and not well understood.¹⁴⁵ If all other ancillary requirements are met, the OED recognizes the individual as a patent practitioner by virtue of being a former USPTO Employee, and the individual is authorized to practice in patent matters before the USPTO.¹⁴⁶

4. Limited Recognition

A narrow way for an individual to become a patent practitioner is following a path that culminates in the individual gaining Limited Recognition.¹⁴⁷ This is a catch-all category that exists for those who are not recognized as a Registered Patent Attorney, Registered Patent Agent, or Reciprocal Agent.¹⁴⁸ Two examples of individuals practicing with Limited Recognition are: (1) non-US citizens; and (2) participants in the USPTO Law School Clinic Certification Program.¹⁴⁹

In the non-US citizen example, Limited Recognition is one of the few ways (other than Reciprocal Recognition) for a non-US citizen to practice in patent matters before the USPTO.¹⁵⁰ Typically, the non-US citizen must be in the United States on a non-immigrant visa.¹⁵¹ The path for these non-US citizens includes: (1) obtaining an STE degree, possibly at an institution outside the United States, to meet the scientific and technical requirement; (2) optionally obtaining a JD degree; and (3) passing the Registration Examination.¹⁵² If these and other requirements discussed below are met, the individual can be recognized with Limited Recognition.¹⁵³

144. See 37 C.F.R. § 11.7(d) (describing waiver of the registration examination for former USPTO employees); see also Harry I. Moatz, U.S. Pat. & Trademark Off., *Interpretation of 37 CFR Secs. 11.7(d)(2) and (d)(3)*, 1291 Off. Gaz. Pat. & Trademark Office 98, 98 (2005) (explaining the interpretation of 37 C.F.R §§ 11.7(d)(2) and (d)(3) by the OED Director and background information for that interpretation concerning the circumstances under which the OED Director may waive the registration examination for former employees of the USPTO).

145. See GENERAL REQUIREMENTS, *supra* note 31, at 2 (describing the extensive list of requirements to submit request for registration by the waiver).

146. 37 C.F.R. § 11.7(d).

147. See *id.* § 11.9(a)–(b).

148. See *id.*

149. *Id.* §§ 11.9(b), 11.16(d).

150. See 37 C.F.R § 11.9(c).

151. See *id.* § 11.9(e).

152. See *id.* § 11.9(d)–(e).

153. *Id.* § 11.9(b).

Limited Recognition is granted only for a period of time consistent with the terms authorized by the federal government for representation of a patent applicant.¹⁵⁴ An individual recognized with Limited Recognition will not continue to be registered if the non-US citizen ceases to lawfully reside in the United States or if registration becomes inconsistent with the terms upon which the non-US citizen continues to lawfully reside in the United States.¹⁵⁵ Limited Recognition limits the clients the individual may represent (e.g., an in-house corporate employer, clients of a law firm, etc.).¹⁵⁶ The rate-limiting step on this path is obtaining a suitable visa to sit for the Registration Examination, which is discussed further in Section V.B.1.¹⁵⁷

In the USPTO Law School Clinic Certification Program example, Limited Recognition is available to law students who are seeking a JD degree in the United States and meet the requirements of the program.¹⁵⁸ These requirements and the program are further described further in Section V.B.2.¹⁵⁹

III. THE PATENT BAR SUFFERS FROM A LACK OF DIVERSITY ATTRIBUTABLE TO THE NARROW PATH TO BECOME A PATENT PRACTITIONER

As discussed above, to become a patent practitioner, an individual must meet the scientific and technical requirements of 37 C.F.R. § 11.7(a)(ii).¹⁶⁰ Few individuals satisfy this requirement because few people seek and obtain a STE degree.¹⁶¹ Even fewer of those

154. *Id.*

155. *See id.* §§ 11.6(b), 11.9(b).

156. *See* 37 C.F.R § 11.9(a) (extending limited recognition no further than granted by the OED Director); *see id.* § 11.9(b) (authorizing the grant of limited recognition to nonimmigrant aliens who are authorized by the United States to present or prosecute a patent application); *id.* § 11.16 (permitting the OED Director to grant limited recognition to practice before the USPTO in patent or trademark matters, or both, to law school students enrolled in a law school clinic that is participating in the USPTO Law School Clinic Certification Program). The scope of the recognition is limited. *See id.* § 11.9(a) (explaining that limited recognition does not extend further than the application for limited recognition specifies).

157. *See infra* Section V.B.1 (proposing a revision to USPTO guidelines which would allow non-US citizen students on a F-1 visa to sit for the Registration Examination).

158. 37 C.F.R. § 11.16(d).

159. *See infra* Section V.B.2.

160. 37 C.F.R. § 11.7(a).

161. *See* Brian Kennedy, Meg Hefferon & Cary Funk, *Half of Americans Think Young People Don't Pursue STEM Because It Is Too Hard*, PEW RSCH. CTR. (Jan. 17, 2018), <https://www.pewresearch.org/fact-tank/2018/01/17/half-of-americans-think-young-people-dont-pursue-stem-because-it-is-too-hard/> [<https://perma.cc/R9RG-6EWP>].

individuals are diverse.¹⁶² Specifically, the percentage of STE degrees earned by women and racial and ethnic minorities are lower than their counterparts at the associates, masters, and doctoral levels.¹⁶³ For example, in 2012, women earned 42 percent of STE degrees at the associate's level, just over 50 percent at the bachelor's level, 46 percent at the master's level, and 41 percent at the doctoral level.¹⁶⁴

Further, there exists a staggering lack of diversity across the general attorney bar, intellectual property attorney bar, and the corps of patent practitioners who represent innovators before the USPTO.¹⁶⁵ For the general attorney bar, the American Bar Association (ABA) reported in 2020 that female attorneys and attorneys of color comprised only 37 percent and 14 percent, respectively.¹⁶⁶ For the intellectual property bar, the American Intellectual Property Association (AIPLA) reported the IP bar was comprised of roughly 20 percent female attorneys and 14 percent attorneys of color.¹⁶⁷ For the patent bar, Professor Saurabh Vishnubhakat reported in 2014 that female practitioners comprised about 18 percent of the bar.¹⁶⁸ A report produced by a data collection firm in 2020 reported female practitioners

162. See Brian L. Yoder, *Engineering by the Numbers*, AM. SOC'Y FOR ENG'G 11, 13, <https://monolith.asee.org/papers-and-publications/publications/college-profiles/15Engineeringby-theNumbersPart1.pdf> [<https://perma.cc/4Q2V-MJYQ>] (last visited Oct. 28, 2021).

163. *Id.*

164. *What Percentage of S&E Degrees Do Women and Racial/Ethnic Minorities Earn?*, NAT'L SCI. FOUND., <https://www.nsf.gov/nsb/sei/edTool/data/college-11.html> [<https://perma.cc/T4L6-ZKF7>] (last visited Oct. 28, 2021). Outside of the colleges, women across the globe are, on average, heavily underrepresented in most emerging professions. See *Global Gender Gap Report 2020*, WORLD ECON. F. 37, https://www3.weforum.org/docs/WEF_GGGR_2020.pdf [<https://perma.cc/RLD7-33E7>] (last visited Oct. 28, 2021) (reporting the gap between the percentage share of male and female workers is most pronounced across the "engineering" job cluster where only 15 percent of all professionals are women).

165. J. Shontavia Johnson, Tonya M. Evans & Yolanda M. King, *Diversifying Intellectual Property Law: Why Women of Color Remain "Invisible" and How to Provide More Seats at the Table*, 10 LANDSLIDE 30, 31 (2018).

166. *ABA Profile of the Legal Profession*, AM. BAR ASS'N 32–33 (2020), <https://www.americanbar.org/content/dam/aba/administrative/news/2020/07/potlp2020.pdf> [<https://perma.cc/8UWT-7FDK>] ("The percentage of female lawyers . . . stood at 31% in 2010 and is now at 37% in 2020. . . . The percentage of lawyers who are men and women of color . . . [was] 14.1% of all lawyers in 2020, according to the ABA National Lawyer Population Survey.")

167. AM. INTELL. PROP. L. ASS'N, 2019 REPORT OF THE ECONOMIC SURVEY I-1 (2019) [hereinafter 2019 REPORT].

168. See Saurabh Vishnubhakat, *Gender Diversity in the Patent Bar*, 14 J. MARSHALL REV. INTELL. PROP. L. 67, 80 (2014).

in the patent bar rose to about 21 percent, but the percentage of patent practitioners who are racial minorities is still a measly 6.5 percent.¹⁶⁹

Admittedly, this bar data is imperfect.¹⁷⁰ For example, the methodology for reporting the ABA and AIPLA data relies on surveys.¹⁷¹ The methodology for reporting Professor Saurabh Vishnubhakat's data relies on gender-matched datasets, and the methodology of the data collection firm is not explicitly disclosed in the report.¹⁷² Nevertheless, these reports demonstrate what is apparent to many patent practitioners: the patent bar suffers from a severe lack of diversity.¹⁷³

The USPTO recently reported more specifically on the gender diversity of patent practitioners registered to practice in patent matters before it.¹⁷⁴ The report was based on an applicant's optional self-designation of a "Mr./Ms." salutation field in electronic applications for the Registration Examination since October 19, 2019.¹⁷⁵ Of those who successfully passed the exam, and hence earned their registration to practice before the USPTO, about 30 percent selected the "Ms." field on their application.¹⁷⁶ According to that same methodology, applied over a slightly longer time period, the data surprisingly shows four times as many women become Registered Patent Agents (22.78 percent) compared to Registered Patent Attorneys (5.65 percent).¹⁷⁷

These various reports consistently show female patent practitioners comprise less than 40 percent of the patent bar.¹⁷⁸ This

169. Spector & Brand, *supra* note 59, at 35 ("Overall, women make up 21.8 percent of USPTO registered attorneys and agents. . . . Since 1950, less than 6 percent of all USPTO registrants have been racially diverse. . . . [T]he average USPTO registration for racial minorities since 2000 has hovered around 6.5%").

170. See Vishnubhakat, *supra* note 168, at 77 (noting that the dataset "is amenable . . . to methodological refinements").

171. See *ABA Profile of the Legal Profession*, *supra* note 166, at 10; Spector & Brand, *supra* note 59, at 33.

172. See Vishnubhakat, *supra* note 168, at 72. See generally Turoski, *supra* note 100 (exploring ways to improve the USPTO's method of calculating gender diversity of patent attorneys).

173. See, e.g., Davis, *supra* note 61; Bolger, *supra* note 66.

174. Letter from Andrei Iancu, Dir. & Under Sec'y of Com. for Intell. Prop., U.S. Pat. & Trademark Off., to Thom Tillis, Chairman, Sen. Judiciary Comm., Christopher A. Coons, Ranking Member, Sen. Judiciary, Comm., & Mazie Hirono, Sen. Judiciary Comm. (Jan. 19, 2021) (on file with the U.S. Pat. & Trademark Off.).

175. *Id.* at 2.

176. See *id.*

177. See Turoski, *supra* note 100.

178. See, e.g., Vishnubhakat, *supra* note 168.

begs the question: If roughly 50 percent of the population are women,¹⁷⁹ why does this lack of gender diversity exist in the patent bar?¹⁸⁰ There are several probable explanations. First, becoming a Registered Patent Attorney or agent requires a STE background—fields where women and minorities are traditionally underrepresented.¹⁸¹ Second, the time and expense of a law school education to become a Registered Patent Attorney or Registered Patent Agent is a barrier for all and may be a higher barrier in some cases for women and individuals from diverse backgrounds.¹⁸² Third, barriers at the USPTO may play a factor.¹⁸³ As discussed above, in Part II, “Paths to Become a Patent Practitioner,” multiple requirements exist, which inhibit some applicants from moving forward in the path to become a patent practitioner.¹⁸⁴ And, as discussed below in Section V.B., “Remove Barriers Students Face at the USPTO,” other hurdles inhibit some potential applicants from becoming patent practitioners (e.g., F1 student visa issues, undergraduates denied permission to participate in the USPTO Law School Clinic Certification Program, and the USPTO National Patent Drafting Competition).¹⁸⁵ It is unclear which of these explanations is

179. See LINDSAY M. HOWDEN & JULIE A. MEYER, U.S. CENSUS BUREAU, AGE AND SEX COMPOSITION: 2010, at 2 (2011), <https://www.census.gov/prod/cen2010/briefs/c2010br-03.pdf> [<https://perma.cc/6STG-ZLLJ>] (reporting the female population of the United States at 50.8 percent of the general population).

180. See Bolger, *supra* note 66 (attributing the gender disparity to “systemic barriers” in the accreditation process).

181. See INSTITUTE OF EDUCATION SCIENCES, *supra* note 98, at 157; *What Percentage of S&E Degrees Do Women and Racial/Ethnic Minorities Earn?*, *supra* note 164; *cf.* ABA Profile of the Legal Profession, *supra* note 166 (reporting that women accounted for 54.1 percent of law students in 2020). *But cf.* Karen Hamrick, *Women, Minorities, and Persons with Disabilities in Science and Engineering*, NAT’L SCI. FOUND.: NAT’L CTR. FOR SCI. & ENG’G STAT. (Mar. 8, 2019), <https://ncses.nsf.gov/pubs/nsf19304/digest/field-of-degree-women> [<https://perma.cc/UWM4-WR6L>] (showing women earn master’s degrees in STEM fields at a higher rate than they earn undergraduate degrees in the same subjects).

182. See Aaron N. Taylor, *The Marginalization of Black Aspiring Lawyers*, 13 FIU L. REV. 489, 507 (2019); *cf.* Theresa M. Beiner, *Not All Lawyers Are Equal: Difficulties That Plague Women and Women of Color*, 58 SYRACUSE L. REV. 317, 320–21 (2008) (observing that structural barriers to advancement exist for women and women of color in large law firms).

183. See Spector & Brand, *supra* note 59. See generally Exec. Order No. 13,985, 86 Fed. Reg. 7,009 (Jan. 20, 2021) (“Because advancing equity requires a systematic approach to embedding fairness in decision-making processes, executive departments and agencies . . . must recognize and work to redress inequities in their policies and programs that serve as barriers to equal opportunity.”).

184. See *supra* Part II (discussing the many hurdles an individual must overcome on both the JD and non-JD paths to become a patent practitioner).

185. See, e.g., 2022 National Patent Application Drafting Competition Rules, U.S. PAT. & TRADEMARK OFF. 4, https://www.uspto.gov/sites/default/files/documents/2022_National_Patent_Application_Drafting_Competition_Rules.pdf [<https://perma.cc/XZJ8-SBS6>] (last visited Oct. 28, 2021) (limiting entry into the USPTO’s annual patent drafting competition to law students).

the predominant cause. Regardless, it is clear patent professionals have a responsibility to find solutions that will improve the gender and racial equity of their profession.¹⁸⁶ Obviously, more objective and reliable data collection and reporting methodologies are needed to produce meaningful statistics on this issue.¹⁸⁷ Nevertheless, the existing data demonstrates a lack of diversity in the patent bar.¹⁸⁸

IV. OLD SOLUTIONS TO THE LACK OF DIVERSITY OF PATENT PRACTITIONERS

Commentators have identified various target audiences and steps in the pipeline to remedy the lack of diversity of Patent Practitioners.¹⁸⁹ These “old solutions” are explored below.

A. In the Schools

A recognized past solution to increase the diversity of patent practitioners is changes to educational programming, with the belief that greater exposure of K–12 students to STE careers and patent law could increase the diversity of individuals who seek to become patent practitioners.¹⁹⁰ The USPTO itself is an educational leader in this area.¹⁹¹ For example, the USPTO leads a “Science of Innovation” partnership with NBC News and National Science Foundation, the National Summer Teacher Institute, and the USPTO Kids program, which includes monthly virtual professional development workshops for K–12 educators interested in intellectual property (IP), innovation,

186. See Spector & Brand, *supra* note 59; Deborah L. Rhode, *Diversity and Gender Equity in Legal Practice*, 82 U. CIN. L. REV. 871, 891–93 (2018).

187. See Turoski, *supra* note 100 (encouraging the USPTO to collect demographic information from inventors and patent practitioners to provide such information voluntarily). The Inventor Diversity for Economic Advancement (IDEA) Act would direct the USPTO to collect inventors’ demographic data on a voluntary basis and make this information available in the aggregate for research. See S. 632, 117th Cong. § 2 (2021).

188. See, e.g., Vishnubhakat, *supra* note 168; Spector & Brand, *supra* note 59.

189. See Spector & Brand, *supra* note 59 (“[F]or the women and minorities who have received a degree in engineering, chemistry, computer science, physics, or biological sciences, an effort should be made to educate those engineers and scientists about opportunities to pursue a career in patent law.”); Johnson et al., *supra* note 165.

190. See, e.g., Letter from Cordell Hardy, Vice President Glob. Operations, Rsch. & Dev., 3M, to Drew Hirshfeld, Acting Under Sec’y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off. 7–9 (Feb. 22, 2021) (on file with the U.S. Pat. & Trademark Off.) (giving examples of STE learning initiatives from kindergarten through college).

191. See “Anyone Can Be an Entrepreneur” with Help of U.S. Patent and Trademark Office, STEMX (June 28, 2018), <https://www.stemx.us/news/2018/06/anyone-can-be-an-entrepreneur-with-help-of-u-s-patent-and-trademark-office> [<https://perma.cc/EXV8-Z7FQ>].

and invention.¹⁹² Some commentators highlight specific examples of outreach to students, such as career day panels/speakers, shadow programs with local practitioners, and published materials distributed to students.¹⁹³ One commentator advocates for partnering with community groups to further deliver quality and impactful education programs.¹⁹⁴

Other encouraging initiatives include programs aimed at students and engineers to increase the number of diverse candidates entering the patent field.¹⁹⁵ One initiative is the “Harrity Academy,” which is comprised of free, online courses taught by attorneys aimed to introduce diverse engineers to the field of patent law, provide training, practice materials, and mentorship, and teach how to effectively and efficiently draft and prosecute high-quality patent applications.¹⁹⁶ Another initiative includes the Patent Pipeline Program (PPP) offered by the National Council on Patent Practicum, Inc., a 501(c)(3)

192. See *id.*; *Intellectual Property (IP) Workshop for K12 Educators*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/learning-and-resources/kids-educators/intellectual-property-ip-workshop-k12-educators-19> [<https://perma.cc/PBS6-WTRR>] (Oct. 18, 2021, 9:45 PM); Letter from June M. Besek, Chair, ABA Intell. Prop. L. Section, to Drew Hirshfeld, Acting Under Sec’y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off. 6 (May 24, 2021) (on file with the U.S. Pat. & Trademark Off.) (expressing the ABA Intellectual Property Law Section’s support for the USPTO’s continued commitment to education and outreach programs).

193. Letter from Daniel J. Staudt, President, Intell. Prop. Owners Ass’n, to Drew Hirshfeld, Acting Under Sec’y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off. 13 (Feb. 23, 2021) (on file with the U.S. Pat. & Trademark Off.); see also Letter from Cordell Hardy, Vice President Glob. Operations, Rsch. & Dev., 3M, to Drew Hirshfeld, Acting Under Sec’y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off., *supra* note 190, at 14 (encouraging the involvement of patent professionals in high school and university STEM classes).

194. See Letter from Gary O’Neill, Managing Dir., Examiners Edge 5–7 (Feb. 18, 2021) (on file with the U.S. Pat. & Trademark Off.) (identifying community organizations targeting underrepresented students).

195. See, e.g., Letter from Daniel J. Staudt, President, Intell. Prop. Owners Ass’n, to Drew Hirshfeld, Acting Under Sec’y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off., *supra* note 193, at 14–16.

196. *The Harrity Academy*, HARRITY & HARRITY, LLP, <https://harrityllp.com/diversity/the-harrity-academy> [<https://perma.cc/VT53-7ZGD>] (last visited Oct. 28, 2021). To enroll in the Harrity Academy:

[Y]ou must meet the following requirements: you have or are obtaining a technical degree in Electrical Engineering, Computer Science, Computer Engineering, Mechanical Engineering, Physics, or equivalent fields from an accredited college or university; you are able and willing to commit to every scheduled class in the selected course; you are eligible to sit for the U.S. Patent Bar; [and] you are female and/or considered a minority in the legal field, pursuant to the Vault and Minority Corporate Counsel Association (MCCA) Guidelines [African-American/Black, Hispanic/Latinx, Alaska Native/American Indian, Asian, Native Hawaiian/Pacific Islander, Multiracial, Openly LGBTQ+, and/or Individual with Disabilities].

Id.

non-profit.¹⁹⁷ The PPP oversees the training, development, and career opportunities of three to four diverse candidates, including a secondment with Facebook (annual salary estimated at \$80K), and potentially culminating in an offer of a full-time position with a prominent law firm (Baker Hostetler or Fisher Broyles) as a technical specialist or Registered Patent Agent (annual salary estimated at \$100K+).¹⁹⁸

B. In the Legal Community

There exist several solutions to increase the diversity of patent practitioners in the broader legal community (i.e., outside the USPTO).¹⁹⁹ Some commentators focus on organizations showing they themselves value the diversity of patent practitioners.²⁰⁰ Relatedly, some proposed solutions focus on the promotion of female, Black, and Hispanic intellectual property lawyers as role models.²⁰¹

One innovative solution focuses on harmonizing the rights and obligations between a Registered Patent Agent with a Registered Patent Attorney.²⁰² Currently, Registered Patent Lawyers and Registered Patent Agents operate with different pay scales for the same work.²⁰³ As discussed above, there is arguably a lower barrier for diverse individuals to join the patent field as Registered Patent Agents.²⁰⁴ In light of this, some commentators suggested permitting a Registered

197. *Patent Pipeline Program*, NAT'L COUNCIL ON PAT. PRACTICUM, <https://ppp.thencpp.org/pppapp> [<https://perma.cc/4U4C-74Z5>] (last visited Oct. 12, 2021).

198. *Id.*

199. *See, e.g.*, Johnson et al., *supra* note 165 (encouraging law school administrators to create and sustain pipeline programs for their students of color).

200. *See* Letter from Joseph Re, President, Am. Intell. Prop. L. Ass'n, to Janine Scianna, Cong. Affs. Specialist, U.S. Pat. & Trademark Off. 11, 13 (Feb. 23, 2021) (on file with the US Pat. & Trademark Off.) (arguing that organizations should emphasize cultural competence education and seek feedback from target demographics about offered diversity programs).

201. *See* Letter from Michael Cima, Professor, Mass. Inst. of Tech., & Stephanie Couch, Exec. Dir., Lemelson-Mass. Inst. of Tech. Program, to Drew Hirshfeld, Acting Under Sec'y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off. 13 (Feb. 6, 2021) (on file with the US Pat. & Trademark Off.) (encouraging the USPTO "to make visible role models of leading female, Black, and/or Hispanic intellectual property attorneys" and providing examples of such role models).

202. *See* Letter from Rachel Kahler, Registered Pat. Agent, to Drew Hirshfeld, Acting Under Sec'y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off. 1 (on file with the US Pat. & Trademark Off.) ("[B]y removing real and perceived barriers to career and economic success as a patent agent, doors are opened to a more diverse pool of candidates, including those who are the first in their families to complete a college degree, working parents, and those starting a second career after working in a technical area.").

203. *See* 2021 REPORT, *supra* note 14.

204. *See supra* Section II.B.1.

Patent Agent to be a co-owner in a law firm with a lawyer and share client fees with a lawyer.²⁰⁵ This solution would make the Registered Patent Agent route more lucrative and visible to a broader and more diverse pool of candidates.²⁰⁶

C. In the USPTO

Another previously proposed solution to increase the diversity of patent practitioners includes the USPTO apprenticeship model.²⁰⁷ This model allowed individuals who completed “a long apprenticeship under a registered patent attorney” to qualify as patent practitioners.²⁰⁸ Although such a model may be difficult to administer, it could open the door to a group of individuals who otherwise would not become patent practitioners.²⁰⁹

Other solutions to increase the diversity of patent practitioners include reevaluating the entire registration process for patent practitioners.²¹⁰ Still, other proposals focus more closely on modifying

205. See Letter from Daniel J. Krueger, President, Nat'l Ass'n of Pat. Pracs., & David D. Smith, Pat. Dir., CableLabs, to Drew Hirshfeld, Acting Under Sec'y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off. 2 (Feb. 23, 2021) (on file with the U.S. Pat. & Trademark Off.) (calling for a re-examination of Model Rule 5.4). Ethics rules vary from state to state. See generally *Jurisdictional Rules Comparison Charts*, AM. BAR ASS'N, https://www.americanbar.org/groups/professional_responsibility/policy/rule_charts [<https://perma.cc/UA8W-JY57>] (last visited Oct. 28, 2021) (comparing application of each of the Model Rules of Professional Conduct among the different US jurisdictions). The USPTO confirmed US patent practitioners may form partnerships and co-own law firms with foreign attorneys without violating the USPTO's Rules of Professional Conduct. See Changes to Representation of Others Before the United States Patent and Trademark Office, 86 Fed. Reg. 28,442, 28,443 (May 26, 2021) (to be codified at 37 C.F.R. pt. 1, 11).

206. See Letter from Daniel J. Krueger, President, Nat'l Ass'n of Pat. Pracs., & David D. Smith, Pat. Dir., CableLabs, to Drew Hirshfeld, Acting Under Sec'y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off., *supra* note 205, at 3.

207. See Alexander S. Evelson, Cassidy A. Pomeroy-Carter & Phil Malone, Comment Letter on Request for Comments on Administrative Updates to the General Requirements Bulletin for Admission to the Examination for Registration to Practice in Patent Cases Before the U.S. Pat. & Trademark Off. 6 (May 24, 2021) (on file with the US Pat. & Trademark Off.).

208. *Id.* (noting the success that large states like New York and California have had with similar programs).

209. See *id.* at 8. However, this may favor non-diverse individuals who may be more likely to know an attorney willing to participate in the program. Cf. Pamela J. Smith, *Failing to Mentor Sapphire: The Actionability of Blocking Black Women from Initiating Mentoring Relationships*, 10 UCLA WOMEN'S L.J. 373, 379 (2000) (observing that “junior white men” enjoy an outsized share of the benefits of mentorship).

210. See Letter from Emil J. Ali & Michael E. McCabe, Jr., McCabe & Ali, LLP, to William R. Covey, Deputy Gen. Couns. for Off. of Enrollment & Discipline & Dir. Off. of Enrollment & Discipline, U.S. Pat. Trademark Off. 4 (May 19, 2021) (on file with the US Pat. Trademark Off.) (urging the USPTO to undertake an independent examination of the registration process to ensure transparency and “fundamental fairness”).

the “legal, scientific, and technical” requirements to practice in patent matters before the USPTO.²¹¹ These proposals range from: (1) entirely doing away with scientific and technical requirements,²¹² to (2) modifying the scientific and technical requirements,²¹³ to (3) employing a credential model similar to the fundamentals of engineering exam,²¹⁴ and to (4) making specific areas of patent law (such as design patents) exempt from them.²¹⁵ Any such changes would be highly contentious, because of a perceived “lowering of the bar” for patent practitioners,²¹⁶ which could reduce the quality of representation by patent practitioners, and the potential administrative costs of going through a formal rule-making process.²¹⁷

211. 37 C.F.R. § 11.7(a)(2)(ii), (b)(1)(i)(C) (2021); *see, e.g.*, Letter from Rachel Kahler, Registered Pat. Agent, to Drew Hirshfeld, Acting Under Sec’y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off., *supra* note 202 (questioning whether those who practice in the design patent field need a technological degree).

212. *See* Letter from Jonah Probell to Drew Hirshfeld, Acting Under Sec’y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off. 1 (May 16, 2021) (on file with the US Pat. & Trademark Off.) (arguing that the scientific and technical requirement is unnecessary, ineffective, arbitrary, and harmful).

213. *See* Administrative Updates to the General Requirements Bulletin for Admission to the Examination for Registration to Practice in Patent Cases Before the United States Patent and Trademark Office, 86 Fed. Reg. 15,467, 15,467 (Mar. 23, 2021); Hannon, *supra* note 15, at 13.

214. *See* Letter from Daniel Staudt, President, Intell. Prop. Owners Ass’n, to Drew Hirshfeld, Acting Under Sec’y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off. 9 (May 24, 2021) (on file with the U.S. Pat. & Trademark Off.).

215. *See* Christopher Buccafusco & Jeanne C. Curtis, *The Design Patent Bar: An Occupational Licensing Failure*, 37 CARDOZO ARTS & ENT. L.J. 263, 274, 296–97 (2019) (proposing, among other things, the creation of a separate design patent bar); *see also* Letter from Christopher Buccafusco, Professor of L., Cardozo L. Sch. & Jeanne C. Curtis, Indep. Consultant, to Drew Hirshfeld, Acting Under Sec’y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off. 6 (Feb. 23, 2021) (on file with the U.S. Pat. & Trademark Off.) (recommending the USPTO expand the list of degrees satisfying the eligibility requirements to practice in patent matters before the USPTO); William Hubbard, *Razing the Patent Bar*, 59 ARIZ. L. REV. 383, 404, 420–21 (2017) (offering a market-based proposal to relax the technical requirements to practice in patent matters before the USPTO); Letter from Eric Goldman, Professor of L., Santa Clara Univ. Sch. L. & Jess Miers, to Andrei Iancu, Under Sec’y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off. 2 (June 30, 2019) (on file with the US Pat. & Trademark Off.) (arguing that the technical requirements to practice in patent matters before the USPTO hurt prospects for women patent practitioners).

216. Gene Quinn, *Lowering the Bar to Diversify the Patent Bar Would Be Misguided and Unethical*, IPWATCHDOG (Dec. 14, 2020), <https://www.ipwatchdog.com/2020/12/14/lowering-bar-diversify-patent-bar-misguided-unethical/id=128263> [<https://perma.cc/L77M-C9ZG>].

217. *See* Bolger, *supra* note 66.

V. NEW SOLUTIONS TO PROMOTE DIVERSITY OF PATENT PRACTITIONERS

Expanding US innovation necessitates developing a national strategy towards building a more demographically, geographically, and economically inclusive innovation ecosystem.²¹⁸ Educational institutions play an indispensable role in preparing students to become entrepreneurs, innovators, and patent practitioners.²¹⁹ For example, colleges prepare students in science and technology, employ innovators, patent and license technologies, and spin-off entrepreneurial businesses.²²⁰

Part V focuses on how to expand avenues for competent STE students who aspire to become patent practitioners and how to remove barriers at the USPTO for these individuals. These new avenues will develop the patent bar to more closely reflect the underlying diversity of the United States, increase connection with a diverse group of innovators, and potentially lower the cost for innovators to engage in the patenting process.²²¹

A. Expanding Avenues for Those Who Aspire to Become Patent Practitioners

Government organizations (GOs) and nongovernmental organizations (NGOs) could support efforts to expand avenues for competent STE students who aspire to become patent practitioners in many ways.²²² This support could take the form of communications, financial assistance, mentoring, rule revisions, educational program support (e.g., coursework), and practical experience (e.g., internships).²²³ An example of support by the USPTO could include

218. Request for Comments on the National Strategy for Expanding American Innovation, 85 Fed. Reg. 83,906, 83,907 (Dec. 23, 2020).

219. See, e.g., Letter from Cordell Hardy, Vice President Glob. Operations, Rsch. & Dev., 3M, to Drew Hirshfeld, Acting Under Sec'y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off., *supra* note 190, at 7–8.

220. See *id.* at 8–9; Letter from Joseph Re, President, Am. Intell. Prop. L. Ass'n, to Janine Scianna, Cong. Affs. Specialist, U.S. Pat. & Trademark Off., *supra* note 200, at 8, 14.

221. For a brief summary of the problems that these solutions seek to address, see Letter from Rachel Kahler, Registered Pat. Agent, to Drew Hirshfeld, Acting Under Sec'y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off., *supra* note 202.

222. See, e.g., Hubbard, *supra* note 215, at 419–20, 423; Spector & Brand, *supra* note 61.

223. See, e.g., Letter from Cordell Hardy, Vice President Glob. Operations, Rsch. & Dev., 3M, to Drew Hirshfeld, Acting Under Sec'y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off., *supra* note 190, at 15; Evelson et al., *supra* note 207, at 8.

coursework developed by the USPTO Office of Education (OE).²²⁴ The USPTO OE provides educational and outreach programming for students, educators, and young inventors and innovators of all ages. It also provides relevant intellectual property, innovation, and invention resources to school administrators, teachers, students, and parents, as well as supporting community-based invention and innovation programs.²²⁵ Another example of support by the USPTO could be providing more opportunities for participation in practical experiences, such as the USPTO Extern Program and the USPTO Trademark Law Student Extern Program.²²⁶ This Section focuses on educational programs GOs (i.e., the USPTO) and NGOs (e.g., trade organizations, law firms, businesses, non-profits, etc., (collectively “Organizations”)) which could support, and ways to offer such support. Such support by Organizations could yield a greater number of diverse patent practitioners simply by increasing the pipeline of patent practitioners, in particular, following a less expensive non-JD degree path.²²⁷

As discussed previously in Part II, “Paths to Become a Patent Practitioner,” individuals aspiring to become a patent practitioner face many obstacles not present in other fields. These obstacles include: lack of awareness of the patent field and profession; structural barriers in obtaining a qualifying STE education; lack of financial resources and the opportunity costs of attending law or graduate school; and other procedural hurdles.²²⁸ The awareness hurdle significantly includes the absence of patent education at the K-12 and undergraduate levels.²²⁹ The educational hurdle includes the rigor of obtaining a STE undergraduate degree when other fields may be perceived as less intensive.²³⁰ The financial hurdle includes the increasing cost of undergraduate, graduate, and professional education, both in terms of

224. See *The Office of Education*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/about-us/organizational-offices/office-under-secretary-and-director/office-education-and-outreach-0> [<https://perma.cc/DAE4-S3LZ>] (July 9, 2020, 4:22 PM).

225. *Office of Education*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/about-us/organizational-offices/office-chief-communications-officer/office-education-and-outreach> [<https://perma.cc/F9AV-GT3H>] (Jan. 21, 2021, 2:13 PM).

226. See *Student Programs*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/jobs/student-programs> [<https://perma.cc/VQP2-VK8H>] (Oct. 13, 2021, 9:58 AM). The term “support” throughout this Article will refer to any and all of the above methods unless otherwise specified.

227. See Spector & Brand, *supra* note 59.

228. See *supra* Section II.A (explaining that a lack of awareness of the legal profession prevents students from law school).

229. See Davis, *supra* note 61.

230. See Kennedy et al., *supra* note 161.

nominal tuition and the opportunity cost of attending further school.²³¹ The procedural hurdle includes the winding paths a student must navigate in order to become a patent practitioner.²³² Further, each of these paths includes numerous requirements or decision points that can potentially discourage a student from becoming a patent practitioner.²³³

Organizations could direct more of their support to educating individuals on the alternative non-JD path to become patent practitioners.²³⁴ This specifically includes support of the alternative non-JD degree paths resulting in an individual becoming a Registered Patent Agent, Reciprocal Agent, or obtaining Limited Recognition.²³⁵ Organizations could support these specific alternative paths to become a patent practitioner because: (1) the USPTO itself already supports students on the JD degree path to become a patent practitioner through its outreach program; (2) support of these alternative non-JD paths will reach a broader population and yield a greater number of diverse individuals who will become patent practitioners; and (3) increased education is necessary for non-JD degree-seeking students to become a competent patent practitioner.²³⁶

In order to be competent to advise and assist patent applicants in the preparation and prosecution of patent applications, an individual on one of the alternative non-JD degree paths is well advised to seek supplemental education.²³⁷ Exemplary types of supplemental education are described below. Organizations (i.e., the USPTO) possess the substantive knowledge, capacity, and talent to support students on the alternative non-JD path to become patent practitioners.²³⁸ An effort by

231. See *Fast Facts: Tuition Costs of College and Universities*, NAT'L CTR. FOR EDUC. STATS., <https://nces.ed.gov/fastfacts/display.asp?id=76#> [<https://perma.cc/G6SM-WSK7>] (last visited Oct. 29, 2021).

232. See *supra* Table 1.

233. *Id.*

234. See *generally id.* (outlining the requirements to become a patent practitioner without a JD).

235. See *generally id.* (outlining the requirements to become a patent practitioner without a JD).

236. See *2022 National Patent Application Drafting Competition Rules*, *supra* note 185; Spector & Brand, *supra* note 59; Vid Mohan-Ram, *Working in Intellectual Property Law Without a Law Degree*, SCI. (Oct. 5, 2001), <https://www.science.org/content/article/working-intellectual-property-law-without-law-degree> [<https://perma.cc/7A42-LBYC>].

237. See Mohan-Ram, *supra* note 236.

238. See, e.g., *Speaker Request Form*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/about-us/organizational-offices/office-chief-communications-officer/speaker-request-form> [<https://perma.cc/J8Y7-EQUR>] (Nov. 4, 2019, 4:19 PM) (allowing the public to request the USPTO director or another USPTO executive “to speak to the public about USPTO priorities and initiatives”). See *generally USPTO Events Offering CLE Credits*, U.S. PAT.

Organizations to support the education of these students will further promote diversity in the corps of intellectual property attorneys and agents who represent innovators.²³⁹ An additional benefit is reducing the cost to innovators by increasing the number of Registered Patent Agents.²⁴⁰

1. JD Degree Programs

The JD degree path is the most well-known education path followed by individuals aspiring to become patent practitioners.²⁴¹ The JD degree path is well-traveled and well-worn.²⁴² This path typically results in the individual becoming a Registered Patent Attorney.²⁴³ Some JD degree programs specialize in patents and intellectual property.²⁴⁴ Following this path can come with great rewards, but also great risks considering the significant investment of time and sizeable financial commitments.²⁴⁵ GOs such as the USPTO invested substantial resources to support students following the primary JD degree path, in particular through the USPTO Law School Clinic Certification Program and the USPTO National Patent Application Drafting Competition.²⁴⁶ The aspiration to assist JD-degree seeking students in their respective paths to become patent practitioners is noble. However, it does not necessarily result in a diverse pool of patent practitioners.²⁴⁷ In contrast, increased support by Organizations to direct individuals

& TRADEMARK OFF., <https://www.uspto.gov/learning-and-resources/patent-and-trademark-practitioners/uspto-events-offering-cle-credits> [<https://perma.cc/495U-2HLC>] (Apr. 1, 2020, 12:03 PM) (listing and describing the continuing legal education courses the USPTO offers on a variety of subjects).

239. See Letter from Eric Goldman, Professor of L., Santa Clara Univ. Sch. L. & Jess Miers, to Andrei Iancu, Under Sec'y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off., *supra* note 215, at 1.

240. See Sir James Dyson, *High Patent Costs Hurt Innovation*, WALL ST. J. (Feb. 14, 2011, 12:01 AM), <https://www.wsj.com/articles/SB10001424052748704364004576132551961574910> [<https://perma.cc/XZT2-VQ4P>] (arguing that high patent costs stifle innovation).

241. See *Patent Practitioner Home Page*, *supra* note 35.

242. *Id.*

243. *Id.*

244. See *University of Minnesota Law School Intellectual Property and Technology Law Concentration*, UNIV. OF MINN. L. SCH., <https://www.law.umn.edu/academics/concentrations/intellectual-property-technology-law-concentration> [<https://perma.cc/W577-HZRM>] (last visited Oct. 29, 2021).

245. See *Tuition & Financial Aid 2021-2022*, UNIV. OF MINN. L. SCH., <https://www.law.umn.edu/admissions/jd-admissions/tuition-financial-aid> [<https://perma.cc/33P3-M3JR>] (last visited Oct. 29, 2021).

246. See *2022 National Patent Application Drafting Competition Rules*, *supra* note 185.

247. See Turoski, *supra* note 100.

toward an alternative non-JD degree path should develop a more diverse pipeline of patent practitioners.²⁴⁸

2. Non-JD Degree Programs

A less-known education path followed by a student aspiring to become a patent practitioner is the non-JD degree path.²⁴⁹ A student following this path could spend less time and money relative to a student following the JD degree path in order to become a patent practitioner.²⁵⁰ However, following this path and foregoing a JD degree may come with a lack of exposure to education and training in certain competencies.²⁵¹ One important competency is the legal, scientific, and technical qualifications necessary to render valuable service to innovators and to advise and assist innovators in preparing and prosecuting patent applications before the USPTO.²⁵² Related is the education and training necessary to become competent to provide services necessary and incident to the preparation and prosecution of patent applications.²⁵³ Examples of “necessary and incident” services include drafting an assignment agreement and advising a client on alternative forms of intellectual property protection available under state law.²⁵⁴ Another important competency includes recognizing and understanding the complexities of US laws and the US judicial system.²⁵⁵ Additionally, important competency includes understanding professional conduct obligations.²⁵⁶

Supplemental education programs can assist an individual following the non-JD degree path to become competent in these areas as a patent practitioner.²⁵⁷ The depth, breadth, time commitment, and financial commitment of supplemental education programs vary by the

248. *See id.*

249. *See* Spector & Brand, *supra* note 59.

250. *See Law School Costs*, *supra* note 64.

251. *See* Mohan-Ram, *supra* note 236.

252. *See* 37 C.F.R. § 11.7(a)(2)(ii)–(iii) (2021).

253. *See id.*

254. *Id.* § 11.5(b).

255. *See id.* § 11.7(a)(2)(ii).

256. *Compare* 35 U.S.C. § 2(b)(2)(D) (granting the USPTO governing authority over “the recognition and conduct of agents, attorneys, or other persons representing applicants or other parties before the Office”), *with* 35 U.S.C. § 32 (granting the USPTO the authority to suspend or exclude from practice before the USPTO any practitioner who is “shown to be incompetent or disreputable, or guilty of gross misconduct, or who does not comply with the regulations established under section 2(b)(2)(D) of this title.”).

257. *See, e.g., Intellectual Property Professional Certificate*, UNIV. OF CAL. SAN DIEGO EXTENSION, <https://extension.ucsd.edu/courses-and-programs/intellectual-property-certificate> [<https://perma.cc/VL9V-HZNT>] (last visited Oct. 29, 2021).

institutional education provider. But in all cases, these programs require less time and financial investment than obtaining a JD degree.²⁵⁸ Supplemental education may include a non-degree program resulting in a certificate which requires less cost and time than obtaining a graduate degree (e.g., MS, PhD) or a law degree.²⁵⁹ Or, the supplemental education may include a formal degree conferred by a law school (e.g., a general or business LLM degree, LLM Patent Law degree, MLS degree, MS Patent Law degree).²⁶⁰

The path to obtain formal supplemental education is shown in Table 2. While fulfilling this supplemental education requirement, the individual following a non-JD degree path may obtain a certificate degree, MLS degree, a MS Patent Law degree, and in some instances, an LLM degree.²⁶¹

Table 2

Admission Type	Registered Patent Attorney	PTAB Pro Hac Vice	Registered Patent Agent	Reciprocal Agent	Former Employee	Limited Recognition
Regulation	37 C.F.R. § 11.6(a)	37 C.F.R. § 11.6(d)	37 C.F.R. § 11.6(b)	37 C.F.R. § 11.6(c)	37 C.F.R. § 11.7(d)	37 C.F.R. § 11.9
JD Degree	Yes	Yes	No	No	No	Yes (Attorney) No (Agent) No (Student)
Supplemental Education	No	No	Certificate, MLS, MS	Certificate, MLS, MS, LLM	Certificate, MLS, MS	Certificate, MLS, MS

a. Undergraduate Degree Programs

A student following the non-JD degree path to become a patent practitioner may elect to augment their scientific and technological education with an advanced STE degree, such as a PhD or Doctor of Medicine (MD) degree.²⁶² STE undergraduate degrees are sufficient for

258. Compare *id.* (listing the various certificate programs at the University of Minnesota and their associated costs), with *Tuition & Financial Aid 2021-2022*, *supra* note 245 (listing the costs associated with a JD from the University of Minnesota Law School).

259. Compare *Intellectual Property Professional Certificate*, *supra* note 257 (listing the various certificate programs at the University of Minnesota and their associated costs), with *Tuition & Financial Aid 2021-2022*, *supra* note 245 (listing the costs associated with a JD from the University of Minnesota Law School).

260. See, e.g., *University of Minnesota Law School LL.M. in Patent Law Admissions*, UNIV. OF MINN. L. SCH., <https://www.law.umn.edu/admissions/llm-patent-law-admissions> [<https://perma.cc/3ML8-KJQ5>] (last visited Oct. 29, 2021).

261. See *University of Minnesota Law School Degree Programs*, UNIV. OF MINN. L. SCH., <https://law.umn.edu/academics/degree-programs> [<https://perma.cc/2XCW-PVXS>] (last visited Nov. 14, 2021).

262. See Christina Szalinski, *Nontraditional Science Careers: Patent Agent*, AM. SOC'Y FOR CELL BIOLOGY (Nov. 4, 2013), <https://www.ascb.org/careers/nontraditional-science-careers-patent-agent/> [<https://perma.cc/94L4-Z63B>].

teaching science, but the underlying coursework does not focus on patents.²⁶³ The lack of visibility of patents and opportunity for undergraduate students to learn about patents in their coursework makes it more difficult for them to either find or follow the non-JD degree path to become a patent practitioner.²⁶⁴ For example, the University of Minnesota Twin Cities' 527-page catalog of non-law school courses offers STE undergraduates only two patent-related courses.²⁶⁵

Organizations (i.e., the USPTO) could fill this gap by supporting the development of undergraduate coursework in the field of intellectual property and patents through the support means discussed above.²⁶⁶ This support could take many forms. Organizations could provide resources for courses in an undergraduate business curriculum, which may include a module or class session directed to intellectual property protection basics, including patent protection.²⁶⁷ Organizations could also provide resources for undergraduate coursework in, for example, an undergraduate engineering capstone course, which could include a module about the requirements for filing a patent, patent ownership, assignment obligations, and non-disclosure obligations.²⁶⁸

Organizations could further expand undergraduate coursework by providing practical, experiential learning (including internships and field placements) in patent drafting and prosecution.²⁶⁹ Organizations could also support undergraduate coursework directed to a survey of intellectual property and patents to help demystify the topics and broaden the pool of students interested in becoming patent practitioners, similar to the materials the USPTO OE provides for inventors and pro se applicants.²⁷⁰ Support from Organizations at the

263. See Kenneth L. Port, Lucas Hjelle & Molly Litman, *Patent Jobs and the Myth of the Employment Hypothesis*, 9 CYBARIS 129, 195 (Dec. 2018).

264. See *id.*

265. *University of Minnesota Twin Cities 2020-22 Undergraduate Courses*, UNIV. OF MINN. 75, 406 <https://catalogs.umn.edu/sites/catalogs.umn.edu/files/2020-09/UMNTC%20Course%20Undergrad%202020-22.pdf> [<https://perma.cc/SCZ3-GQX9>] (last visited Oct. 29, 2021) (summarizing the subject matter covered in Business Law Basics, BLAW 3061; and Antibiotics: Promise, Profits, and Pitfalls, PLPA 1901.).

266. See, e.g., Technology Transfer Tactics, *Gateway to IP Program Seeds Patent Know-How in Students, Cuts Legal Costs*, TECH TRANSFER CENT., <https://techtransfercentral.com/reprints/ttt/220-gateway-to-ip-program-seeds-patent-know-how-in-students-cuts-legal-costs/> [<https://perma.cc/GJ58-UC8P>] (last visited Oct. 29, 2021).

267. See, e.g., *id.*

268. See Port et al., *supra* note 263.

269. See, e.g., *Student Programs*, *supra* note 226.

270. See, e.g., *Intellectual Property and Technology Proseminar*, UNIV. OF MINN. L. SCH., <https://www.law.umn.edu/course/5026/intellectual-property-and-technology-proseminar>

undergraduate level would serve the primary purpose of raising awareness of the patent practitioner career path for STE undergraduate students, which would increase the diversity of the patent bar.²⁷¹

b. Certificate Programs

A student following the non-JD degree path to become a patent practitioner may elect to obtain supplemental education tailored to a particular area of interest.²⁷² Such a program is typically informal and is commonly referred to as a “certificate” program.²⁷³ Certificate programs may follow an academic calendar or may be composed of short courses.²⁷⁴ These programs are generally low in cost and high in specialization.²⁷⁵ An example of a certificate program includes the Professional Certificate in Intellectual Property offered by the University of California San Diego Extension.²⁷⁶

Supplemental education may also be delivered through an informal non-degree educational program, such as an informational webinar offered by a continuing legal education program (CLE) or law firm.²⁷⁷ Organizations such as the USPTO, and other providers, organize and participate in a variety of CLE courses for patent practitioners.²⁷⁸ The USPTO currently offers some excellent CLE

[<https://perma.cc/7DWB-VJ8V>] (last visited Oct. 29, 2021) (permitting undergraduate students at the University of Minnesota to enroll in an intellectual property law course); *Patent Law Proseminar*, UNIV. OF MINN. L. SCH., <https://www.law.umn.edu/course/5025/patent-law-proseminar> [<https://perma.cc/98KK-CDMK>] (last visited Oct. 29, 2021) (permitting undergraduate students at the University of Minnesota to enroll in a patent law course); *Patents*, UNIV. OF MINN. L. SCH., <https://www.law.umn.edu/course/5224/patents> [<https://perma.cc/W2U4-ZJB3>] (last visited Oct. 29, 2021) (permitting undergraduate students at the University of Minnesota to enroll in a patent law course); *Copyright*, UNIV. OF MINN. L. SCH., <https://www.law.umn.edu/course/5613/copyright> [<https://perma.cc/Q86E-NNV3>] (last visited Oct. 29, 2021) (permitting undergraduate students at the University of Minnesota to enroll in a copyright law course).

271. See Port et al., *supra* note 263.

272. See, e.g., *College of Continuing & Professional Studies*, UNIV. OF MINN., https://ccaps.umn.edu/professional-development/search?keyword=&program_type%5B3261%5D=3261 [<https://perma.cc/93ZH-WT4V>] (last visited Nov. 15, 2021).

273. See *id.*

274. See *id.*

275. See *id.*

276. *Intellectual Property Professional Certificate*, *supra* note 257.

277. See, e.g., *Continuing Legal Education*, AM. INTELL. PROP. LAW ASS'N, <https://www.aipla.org/home/meetings-education/continuing-legal-education> [<https://perma.cc/Z6NA-ZPCN>] (last visited Oct. 29, 2021).

278. See *Continuing Legal Education for Patent Practitioners*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/learning-and-resources/attorneys-agents-paralegals/continuing-legal-education> [<https://perma.cc/4WNV-GTMH>] (Nov. 20, 2020, 2:54 PM).

courses and other pieces of training.²⁷⁹ The USPTO currently does not require CLEs for patent practitioners but does provide a mechanism for reporting.²⁸⁰

Certificate programs and CLE programs provide advantages with respect to cost, time, and substantive content, as compared to JD Degree Programs.²⁸¹ However, few certificate programs currently exist in the field of patent law,²⁸² and CLE programs often lack formal curricular design and learning objectives.²⁸³ Organizations could fill this gap by supporting certificate programs and CLEs in the field of patent practice, either through the development or dissemination of existing CLE materials or Certificate programs.²⁸⁴ Furthermore, since certificate programs and CLEs sometimes lack formality and structure, there is an opportunity for Organizations (i.e., the USPTO) to provide structured mentorship and other formalized education for patent practitioners following this path.²⁸⁵

279. See *USPTO Events Offering CLE Credits*, *supra* note 238 (listing Continuing Legal Education credit offerings across the country covering a variety of topics).

280. See Setting and Adjusting Patent Fees During Fiscal Year 2020, 85 Fed. Reg. 46,932, 46,948 (Aug. 3, 2020) (to be codified at 37 C.F.R. pt. 1, 11, 41, 42). The USPTO recognizes patent practitioners on the public register who certify completion of six credit hours of CLE in the twenty-four months preceding payment of the biennial active patent practitioner fee, including five credit hours of patent law and practice and one hour of ethics credit. See *id.* Participation in USPTO CLE is voluntary for patent practitioners and generally open to all. See *id.*

281. Compare *Intellectual Property Professional Certificate*, *supra* note 257 (listing the various certificate programs at the University of Minnesota and their associated costs), with *Tuition & Financial Aid 2021-2022*, *supra* note 245 (listing the costs associated with a JD from the University of Minnesota Law School).

282. For an offering of certificate courses for academic scientists and technology entrepreneurs exploring the potential commercialization of specific innovations, see *Minnesota Innovation Corps (MIN-Corps) Programs*, UNIV. OF MINN., <https://mincorps.umn.edu/programs> [<https://perma.cc/4NCG-VX6D>] (last visited Oct. 29, 2021). For another example of a certificate program, see *Intellectual Property Law Certificate*, UNIV. OF DAYTON, https://udayton.edu/law/llm_msl/certificates.php#Intellectual [<https://perma.cc/V2WU-ZKS3>] (last visited Oct. 29, 2021).

283. See Holly B. Fisher & W. Franklin Spikes, *Exploring Programmatic Issues Which Affect Continuing Legal Education in Kansas*, ADULT EDUC. RSCH. CONF. 5 (June 10, 2017) <https://newprairiepress.org/cgi/viewcontent.cgi?article=3860&context=aerc> [<https://perma.cc/X89D-QCLC>].

284. See *Continuing Legal Education for Patent Practitioners*, *supra* note 278; *USPTO Events Offering CLE Credits*, *supra* note 238.

285. See *Intellectual Property Professional Certificate*, *supra* note 257; *General FAQs: Continuing Legal Education*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/learning-and-resources/general-faqs#type-continuing-legal-education_194414 [<https://perma.cc/L47C-UZVH>] (Feb. 21, 2018, 8:56 AM). For an example of a mentoring program for patent practitioners, see *NAPP Mentoring Program Is Officially Open for Business!*, NAT'L ASS'N OF PAT. PRACS., <https://www.napp.org/mentor-mentee-program> [<https://perma.cc/QWX9-A9MX>] (last visited Nov. 15, 2021).

c. LLM Degree Programs

An international student following the non-JD degree path to become a patent practitioner may also elect to augment their expertise in patents through optional supplemental education, specifically through an LLM degree from a US law school.²⁸⁶ The term “international students” in this context means the collective body of non-US citizens attending US law schools, particularly those students pursuing an LLM degree. Such an international student often has expertise in the laws of their country and may be a lawyer or barrister in their country.²⁸⁷ If the student is an international student and has received a law degree from their home country, then the student may follow the path to Limited Recognition.²⁸⁸

Such international students may choose to pursue a general or specialized LLM degree from a US law school.²⁸⁹ In the United States, only about sixty-five law schools offer a specialized LLM degree in Intellectual Property Law,²⁹⁰ and far fewer offer a specialized LLM degree in Patent Law.²⁹¹ Specialized degree programs may have a curriculum to address issues relevant to international students.²⁹² Such issues may include the US legal and judicial system, ethics, and advising innovators in the unique US services necessary to prepare and prosecute patent applications.²⁹³

286. See, e.g., *LL.M. in Patent Law Admissions*, UNIV. OF MINN. L. SCH., <https://law.umn.edu/admissions/llm-patent-law-admissions> [https://perma.cc/76PR-8JX3] (last visited Oct. 29, 2021).

287. See *LL.M. Program*, UNIV. OF MINN. L. SCH., <https://law.umn.edu/academics/degree-programs/llm-program> [https://perma.cc/PWL8-89U7] (last visited Oct. 29, 2021).

288. 37 C.F.R. § 11.6(c) (2021).

289. See *LL.M. in Patent Law Admissions*, *supra* note 286.

290. *LLM Programs in Intellectual Property (IP) Law - United States*, LLM GUIDE, <https://llm-guide.com/schools/usa/concentration/intellectual-property-ip-law> [https://perma.cc/4CQA-D94V] (last visited Oct. 29, 2021).

291. See *id.* (choose “Show Filter Options”; then type “patent” under “Keywords”; then click “Filter”). Compare *LL.M. in Patent Law Admissions*, *supra* note 286 (offering a program that provides the skills and knowledge to become a leader in the field of patent law), with *LL.M. Program for International Students*, VAND. L. SCH., <https://law.vanderbilt.edu/prospective-students/llm-program/> [https://perma.cc/JT3A-6XRX] (last visited Oct. 29, 2021) (offering three programs, none of which focus on patent law).

292. See *LLM Programs*, NW. UNIV. PRITZKER SCH. OF L., <https://www.law.northwestern.edu/academics/degree-programs/llms/> [https://perma.cc/2W2K-5DY7] (last visited Nov. 15, 2021).

293. See, e.g., *Curriculum*, NW. UNIV. PRITZKER SCH. OF L., <https://www.law.northwestern.edu/academics/degree-programs/llms/llm/curriculum/> [https://perma.cc/L4XZ-Q6HA] (last visited Oct. 21, 2021) (listing courses that introduce students to the particularities of the US legal system and profession); *cf.* 37 C.F.R. § 11.5(b) (listing the services that one who is registered to practice before the USPTO in patent cases is permitted to provide).

There is an opportunity to increase the diversity of patent practitioners by creating new paths to enter the patent bar and become patent practitioners.²⁹⁴ International students bring with them a richness of language skills, cultural competencies, knowledge, and expertise in the laws of their home countries.²⁹⁵ They also bring unique experiences, such as cross-border education and work.²⁹⁶ These experiences could enhance the human capital of the patent bar and, in turn, benefit the US innovation ecosystem.²⁹⁷ An international student's expertise in the laws of their home country may be especially important to innovators who seek international patent protection, which is increasingly important in our global economy; obtaining an LLM degree might also be the best way for an international student to become competent in US patent law.²⁹⁸ The dual expertise of an international student in the patent law of both their home country and the US can further expand innovation by creating new opportunities for inventors to market their inventions in multiple countries.²⁹⁹ International students, therefore, play a vital and potentially underappreciated role in contributing to US innovation.³⁰⁰

International students pursuing an LLM degree may possess a first or underlying STE degree in fields in which innovators need representation (e.g., computer science, engineering, robotics, artificial intelligence, etc.).³⁰¹ Most international students are permitted to study under an F-1 student visa.³⁰² However, due to student visa laws,

294. Hannon, *supra* note 15, at 1 (“The patent bar . . . can foster greater inclusion and innovation in the U.S. patent system by . . . implementing . . . alternative path[s] to patent bar eligibility.”).

295. See *LLM in International Human Rights*, NW. UNIV. PRITZKER SCH. OF L., <https://www.law.northwestern.edu/academics/degree-programs/llms/llmshr/> [<https://perma.cc/5T3B-2466>] (last visited Oct. 29, 2021).

296. See, e.g., *LL.M. Student Profiles*, VAND. L. SCH., <https://law.vanderbilt.edu/prospective-students/llm-program/llm-profiles/> [<https://perma.cc/6S9E-CLPH>] (last visited Oct. 29, 2021).

297. See Johnson et al., *supra* note 165.

298. See *LLM in American Law (for Non-US Lawyers)*, BOS. UNIV. SCH. OF L., <https://www.bu.edu/law/academics/llm-masters-degrees/american-law/> [<https://perma.cc/34SX-YRFY>] (last visited Oct. 29, 2021) (“Foreign-trained attorneys are increasingly called upon to handle the complex demands of their global clients—clients whose cross-border interests implicate US law. To serve their clients or advise their companies, global lawyers must not only understand the substance of USA law, they must also work effectively with their US-trained counterparts.”).

299. See *id.*

300. See *id.*

301. See, e.g., *M.S.P.L. Class of 2021*, UNIV. OF MINN. L. SCH., <https://law.umn.edu/academics/degree-programs/mspl-program/mspl-class-2021> [<https://perma.cc/ZU69-GUJD>] (last visited Nov. 1, 2021) (listing patent law students with STE degrees).

302. See *Student Visa*, U.S. DEPT OF STATE, <https://travel.state.gov/content/travel/en/us-visas/study/student-visa.html> [<https://perma.cc/B29R-AUJD>] (last visited Nov. 1, 2021).

international students may only reside in the United States for a limited time and are afforded limited opportunities to find employers willing to sponsor them.³⁰³ Further, international students possess limited opportunities to sit for the Registration Examination.³⁰⁴ The USPTO could fill this gap by amending the eligibility guidelines to sit for the Registration Examination, further supporting an international student's opportunity to sit for the Registration Examination.³⁰⁵ This change may lead to increased employment in the United States to represent innovators. This proposal is provided in more detail in Section V.B.1 below.³⁰⁶

d. MLS Degree Programs

A student following the non-JD degree path to become a patent practitioner may also elect to expand their expertise in patents through a Master of Legal Studies (MLS) degree from a US law school.³⁰⁷ A Juris Master (JM) degree, or some other variant of a law school degree, may also be appropriate.³⁰⁸ The MLS degree may be particularly suited for students following the path to become a Reciprocal Agent.³⁰⁹ Such students are already authorized to practice patent law before the patent office of their home country but may not be experts in US law.³¹⁰

303. See *Students and Employment*, U.S. CITIZEN & IMMIGR. SERVS., <https://www.uscis.gov/working-in-the-united-states/students-and-exchange-visitors/students-and-employment> [<https://perma.cc/P4QR-3TWZ>] (last visited Nov. 1, 2021) (explaining that a student must be enrolled in an accredited academic institution to have a valid student visa).

304. See GENERAL REQUIREMENTS, *supra* note 31, at 7–8.

305. See Letter from June M. Besek, Chair, ABA Section of Intell. Prop. L., to Andrew Hirshfeld, Acting Under Sec'y of Com. for Intell. Prop. & Dir., U.S. Pat. & Trademark Off. (May 24, 2021) (on file with the U.S. Pat. & Trademark Off.).

306. See *infra* Section V.B.1.

307. See *Intellectual Property*, PEPP. UNIV., <https://onlinegrad.pepperdine.edu/law/online-mls/career-paths/intellectual-property/> [<https://perma.cc/T8DV-8U4V>] (last visited Nov. 16, 2021) (explaining that an MLS in Intellectual Property can supplement a patent practitioner's knowledge of patent and intellectual property law, enabling them to serve clients more effectively).

308. See, e.g., *Juris Master (JM)*, EMORY L., <https://law.emory.edu/academics/degrees/juris-master/index.html> [<https://perma.cc/V8LB-V74Q>] (last visited Nov. 16, 2021) (explaining that a Juris Master (JM) degree program is designed specifically for mid-career professionals who want to advance their careers by gaining more in-depth knowledge of the law relevant to their fields).

309. See 37 C.F.R. § 11.6(c) (2021) (“Any foreigner not a resident of the United States . . . that . . . is registered and in good standing before the patent office of the country in which he or she resides and practices . . . may be registered as a patent agent to practice before the Office for the limited purpose of presenting and prosecuting patent applications of applicants located in such country, provided that the patent office of such country allows substantially reciprocal privileges to those admitted to practice before the Office.”).

310. See *id.*

Some law schools offer MLS degrees with a focus on intellectual property law.³¹¹ However, few programs focus on patents, especially patent ethics.³¹² Organizations could fill this gap by providing support to MLS degree programs with expertise such as educational materials in patent practice, patent ethics, and US administrative law.³¹³

e. MS Patent Law Degree Programs (A Case Study Example)

A student following the non-JD degree path to become a patent practitioner may also elect to expand their expertise in patents through optional supplemental education, specifically an MS Patent Law degree.³¹⁴ The MS Patent Law degree differs from the MLS degree because it is a Master in Science degree.³¹⁵ MS degrees typically focus on STE topics.³¹⁶ In comparison, a Master in Laws or Master in Legal Studies degree typically focuses on various aspects of the law.³¹⁷

The MS Patent Law degree program, like the Patent Law LLM degree program, focuses on patent law for those with STE credentials, as well as other topics necessary and helpful to practice as a patent practitioner.³¹⁸ As a result, the program can provide students with a

311. See, e.g., *Intellectual Property Concentration*, UNIV. OF ARIZ., <https://law.arizona.edu/intellectual-property-concentration> [<https://perma.cc/WF5F-4YQD>] (last visited Nov. 1, 2021).

312. See, e.g., *id.* (listing the program's required courses, of which only two are intellectual-property-specific and none mention patents).

313. See, e.g., *Patent and Trademark Resource Centers*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/learning-and-resources/support-centers/patent-and-trademark-resource-centers-ptrcs> [<https://perma.cc/GCD6-ESM6>] (Feb. 26, 2019, 3:01 PM); *Learning and Resources*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/learning-resources> [<https://perma.cc/NQH3-ZRML>] (Sept. 16, 2021, 4:02 PM).

314. See, e.g., *M.S.P.L. Program*, UNIV. OF MINN. L. SCH., <https://law.umn.edu/academics/degree-programs/mspl-program> [<https://perma.cc/3C8P-FUMA>] (last visited Nov. 16, 2021); *Master of Science in Law: Patent Law*, COLO. L. 2, https://www.colorado.edu/law/sites/default/files/MSL_PatentLaw_Brochure_2016_web.pdf [<https://perma.cc/AJ3A-B8NJ>] (last visited Nov. 16, 2021); *Master's in Patent Practice*, CASE W. RESRV. UNIV., <https://case.edu/law/academics/masters-programs/masters-patent-practice> [<https://perma.cc/2LTA-Y57Q>] (last visited Nov. 1, 2021).

315. *Compare General MLS Degree Path*, UNIV. OF ARIZ., <https://law.arizona.edu/general-mls-degree-path> [<https://perma.cc/HS5A-YAAT>] (last visited Nov. 1, 2021) (explaining that the Master of Legal Studies degree provides a thorough introduction to the major areas of law and legal practice), *with M.S.P.L. Program*, *supra* note 314 (explaining that the Master of Science in Patent Law degree provides extensive practical training).

316. See *Curriculum & Requirements*, UNIV. OF MINN. L. SCH., <https://law.umn.edu/academics/degree-programs/mspl-program/curriculum-requirements> [<https://perma.cc/R5DW-EN67>] (last visited Nov. 1, 2021).

317. See *Intellectual Property Concentration*, *supra* note 311.

318. See *M.S.P.L. Program*, *supra* note 314.

substantive breadth and depth in patent knowledge beyond degree programs such as BS, MLS, LLM, and certificate programs.³¹⁹

As noted previously, one risk of following the non-JD degree path is individuals may not receive the formal supplemental education to become competent and ethical patent practitioners.³²⁰ Organizations could fill this gap by supporting MS Patent Law degree programs through the mechanisms discussed above, chiefly communications, financial, practical experience (e.g., internships), educational program support (e.g., coursework), mentoring, and rule revisions.³²¹ Such support will further expand avenues for competent STE students who aspire to become patent practitioners, thereby increasing the total number of diverse patent practitioners.³²²

Some law schools offer an MS Patent Law degree or equivalent.³²³ The MS Patent Law degree program offered by the University of Minnesota Law School (UMN MS Patent Law) is an example of such a degree program.³²⁴ This Section uses the UMN MS Patent Law degree program as a case study for exploring the role of

319. *Compare Curriculum & Requirement*, *supra* note 316 (offering multiple patent-focused courses each semester), with *Intellectual Property Concentration*, *supra* note 311 (requiring only two patent-focused courses for completion of the program), *Certificate in Patent Law*, CAMPBELL UNIV., <https://law.campbell.edu/apply/certificates/certificate-in-patent-law/> [<https://perma.cc/BXK8-GJVW>] (last visited Nov. 1, 2021) (offering three patent-focused courses), and *University of Minnesota Twin Cities 2020–22 Undergraduate Courses*, *supra* note 265 (listing only two patent-related courses available to STE undergraduate students).

320. *See, e.g., Intellectual Property Concentration*, *supra* note 311; *Certificate in Patent Law*, *supra* note 319; *University of Minnesota Twin Cities 2020–22 Undergraduate Courses*, *supra* note 265.

321. *See, e.g., Student Programs*, *supra* note 226; *Expanding Innovation*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/initiatives/expanding-innovation> [<https://perma.cc/49FV-47CX>] (Oct. 28, 2021, 4:03 PM); *Patent Trademark Resource Centers*, *supra* note 313; *2021 USPTO National Patent Drafting Competition Rules*, U.S. PAT. & TRADEMARK OFF. 4, <https://www.uspto.gov/sites/default/files/documents/PDCRules.pdf> [<https://perma.cc/N2RF-73JC>] (Oct. 22, 2020); Elizabeth Ahlin, *U Law School Launches Patent Masters*, MINN. LAW. (Apr. 4, 2014) <https://minnlawyer.com/2014/04/04/u-law-school-launches-patent-masters/> [<https://perma.cc/ZE5X-57DS>].

322. *See* Mary T. Hannon, *supra* note 15, at 1 (“The patent bar . . . can foster greater inclusion and innovation in the U.S. patent system by . . . implementing . . . alternative path[s] to patent bar eligibility.”).

323. *See, e.g., Master’s in Patent Practice*, *supra* note 314; *Patent Law*, UNIV. OF MD. CAREY KING SCH. OF L., <https://www.law.umaryland.edu/Prospective-Students/MS-in-Law/Patent/> [<https://perma.cc/7GPL-MRL3>] (last visited Nov. 1, 2021) (detailing the Master of Science in Law specializing in Patent Law offered by the University of Maryland); *M.S.L. Degree*, UNIV. OF DAYTON, https://udayton.edu/law/llm_msl/certificates.php#Intellectual [<https://perma.cc/MN53-W3HX>] (last visited Nov. 1, 2021) (detailing the certificate in Intellectual Property offered to students earning a MSL Degree at the University of Dayton); *Master of Science in Law: Patent Law*, *supra* note 314 (explaining the MSL in Patent Law degree formerly offered by University of Colorado Law School).

324. *See M.S.P.L. Program*, *supra* note 314.

universities providing MS patent law degree programs as a non-JD degree path to become a patent practitioner.

1. Overview

UMN Law first offered the UMN MS Patent Law degree program in 2014.³²⁵ The program combines the traditional study of patent law's complexity with project-based learning, focusing on business strategies and extensive practical training.³²⁶ A student in the UMN MS Patent Law degree program participates in courses alongside JD degree-seeking students.³²⁷ Both UMN Law JD and UMN MS Patent Law degree-seeking students undertake the same learning experience, having access to the same professors, classrooms, books, and examinations.³²⁸ UMN MS Patent Law degree-seeking students are a part of the UMN Law student community, serve in leadership positions in law student government and affinity groups, and gain a law school experience.³²⁹ Because of this law school experience, UMN MS Patent Law graduates are well situated to advise innovators on patent matters and work with other patent practitioners such as Registered Patent Attorneys.³³⁰

2. Time Commitment

A student completes the UMN MS Patent Law degree program in nine months.³³¹ In comparison, a student following the primary JD degree path spends at least three years in law school to become a Registered Patent Attorney.³³² Accordingly, the UMN MS Patent Law

325. See Ahlin, *supra* note 321.

326. *M.S.P.L. Program*, *supra* note 314.

327. University of Minnesota Law School, #StudentStories: Keaton Krueger M.S.P.L. '19: Why the M.P.S.L. Program at Minnesota Law?, YOUTUBE (May 14, 2019), <https://www.youtube.com/watch?v=UjEHq5ZnFOo> [<https://perma.cc/TR7S-AHL3>].

328. *Id.*

329. See University of Minnesota Law School, *Testimonial Jackson Satterlee MSPL '20*, YOUTUBE (Feb. 15, 2021), <https://www.youtube.com/watch?v=KJo13Dnfcx0> [<https://perma.cc/X7A5-CN79>] (thanking the M.S.P.L. Program's representative on the Law Council for "help[ing] shape the law school's policies for the better"); see also *Student Team Wins National Patent Application Drafting Competition, Advances To Nationals*, UNIV. OF MINN. L. SCH. (Mar. 7, 2021), <https://law.umn.edu/news/2021-03-07-student-team-wins-regional-patent-application-drafting-competition-advances-nationals> [<https://perma.cc/TP6Q-X8JL>] (describing a patent drafting application team consisting of two MS Patent Law students and two JD students).

330. *M.S.P.L. Program*, *supra* note 314.

331. *Curriculum & Requirements*, *supra* note 316.

332. *Curriculum & Requirements*, UNIV. OF MINN. L. SCH., <https://law.umn.edu/academics/degree-programs/jd/curriculum-requirements> [<https://perma.cc/3HU3-R8FM>] (last visited Nov. 1, 2021).

degree program provides a significant reduction in the amount of time a student must commit to become a patent practitioner compared to following the primary JD degree path.³³³

3. Financial Commitment

The financial cost for a student to obtain the UMN MS Patent Law degree is about one-third the financial cost to obtain a typical JD degree.³³⁴ As a further financial benefit, a student may enroll on a part-time basis in the UMN MS Patent Law degree program without financial penalty and complete the degree program in three years.³³⁵ A part-time schedule allows the student to work at home or draw a salary from an employer while spreading tuition payments over a more extended period.³³⁶ Furthermore, each student in the UMN MS Patent Law degree program receives a scholarship or employer tuition reimbursement.³³⁷ Accordingly, the UMN MS Patent Law degree program provides significant flexibility with regards to the time commitment and the spreading of financial payments over a more extended period for students who desire to become patent practitioners.³³⁸

4. Curriculum

The curriculum for the UMN MS Patent Law degree program is broad and deep—students must complete twenty-three credits of required courses and at least seven credits of approved elective courses.³³⁹ These courses are designed to prepare a student to become sufficiently competent to provide services necessary and incident for the preparation and prosecution of patent applications.³⁴⁰ This includes

333. Compare *id.* (explaining that JD students must study for six semesters), with *Curriculum and Requirements*, *supra* note 316 (explaining that MS Patent Law students can complete the program in one year).

334. Compare *FAQs*, UNIV. OF MINN. L. SCH., <https://law.umn.edu/admissions/ms-patent-law-admissions/faqs> [<https://perma.cc/KBA3-W4NS>] (last visited Nov. 1, 2021) (explaining that an MSPL degree will cost at least \$54,630 to complete), with *Tuition & Financial Aid 2021-2022*, *supra* note 245 (explaining that a JD could cost \$133,128 to complete).

335. *Curriculum & Requirements*, *supra* note 316.

336. *Id.*

337. See *M.S.P.L. Program*, *supra* note 314.

338. See *Curriculum & Requirements*, *supra* note 316; see also *Payment Plan*, UNIV. OF MINN., <https://onestop.umn.edu/finances/payment-plan> [<https://perma.cc/H9FR-FP47>] (last visited Nov. 1, 2021) (explaining the process for paying for a degree at the University of Minnesota in installments).

339. *Curriculum & Requirements*, *supra* note 316.

340. See *M.S.P.L. Program*, *supra* note 314.

taking into account considerations like relying on alternative forms of protection, drafting an assignment, or advising a client on alternative forms of intellectual property protection available under state law.³⁴¹

Some courses in the UMN MS Patent Law degree program orient the student to the US legal system and common law, such as a course in Introduction to the American Legal System.³⁴² Other courses in the UMN MS Patent Law degree program prepare the student to advise and assist patent applicants in preparing and prosecuting patent applications before the USPTO (i.e., giving advice to a client in contemplation of filing a patent application, drafting the specification or claims of a patent application, drafting an amendment or reply to a communication from the USPTO, etc.).³⁴³ For example, core and elective courses include Patents, Patent Prosecution Practice I and II, Patent Research and Writing, Patent Law Proseminar, Patent Field Placement, Patent Drafting, and Oral Advocacy Competition Team, and Patent Law Capstone: Innovation.³⁴⁴ Additional courses prepare the student to perform services reasonably necessary and incidental to the preparing and prosecuting of patent applications before the USPTO, including considering the advisability of relying on alternative forms of protection available under state law.³⁴⁵ For example, elective courses include Trade Secret Law, Trademarks, Copyright, Unfair Competition, International Intellectual Property, Intellectual Property, and Technology Proseminar, to name a few.³⁴⁶ Other courses prepare the student to draft or execute an assignment for the patent owner contemplating filing or prosecuting a patent application for a patent owner.³⁴⁷ For example, courses include Intellectual Property Transactions and Legal Research and Writing.³⁴⁸ In addition to the standard curriculum, additional courses such as Ethics for Registered Patent Agents, prepare the student in ethics, professional responsibility obligations, and the USPTO Rules of Professional Conduct.³⁴⁹ Accordingly, the UMN MS Patent Law provides a broad and deep

341. *Curriculum & Requirements, supra* note 316 (detailing the Master of Science in Patent Law coursework).

342. *See id.*

343. *See id.*

344. *Id.*

345. *See id.*

346. *Id.* (detailing additional elective coursework that prepare students to perform services related to patent applications before the USPTO).

347. *See id.*

348. *See id.*

349. *Id.*

curriculum in patents, and its graduates are well situated to practice in patent matters as patent practitioners before the USPTO.³⁵⁰

5. Experiential Opportunities

UMN is an R1 (i.e., very high research activity) doctoral university.³⁵¹ Accordingly, students enrolled in the program have the opportunity to work on actual, non-hypothetical patent matters for real inventions and carry out actual patentability searches and patent applications.³⁵²

6. Faculty

In addition to tenured faculty, the UMN MS Patent Law degree program enjoys strong support from adjunct faculty selected from local companies and law firms.³⁵³ These companies and law firms include: IBM, 3M, Medtronic, Ecolab, General Mills, Wells Fargo, Fish & Richardson, Merchant & Gould, and Faegre Baker Daniels.³⁵⁴ In addition to teaching students, the adjunct faculty often provide career advice and mentoring.³⁵⁵ Accordingly, students enrolled in the program begin to build their professional networks while gaining practical advice from seasoned professionals.³⁵⁶

7. Diversity

Attracting diverse STEM students to enter an in-residence educational program in Minnesota is an obstacle faced by the UMN MS Patent Law degree program.³⁵⁷ The university's strategic plan, announced by UMN President Joan T.A. Gabel, includes recruiting diverse students, faculty, and staff, decreasing four-year and six-year graduation gaps between white and Black and Indigenous People of Color (BIPOC) students by 50 percent by 2025, and reducing disparities

350. *See id.*

351. *Why Minnesota?*, UNIV. OF MINN., <https://gominnnesota.umn.edu/why-minnesota> [<https://perma.cc/PN59-74MU>] (last visited Nov. 1, 2021).

352. *See Curriculum & Requirements*, *supra* note 316.

353. *See Program Faculty*, UNIV. OF MINN. L. SCH., <https://law.umn.edu/academics/degree-programs/mspl-program/program-faculty> [<https://perma.cc/2NWS-FXQL>] (last visited Nov. 1, 2021).

354. *Id.*

355. *See id.*

356. *Curriculum & Requirements*, *supra* note 316.

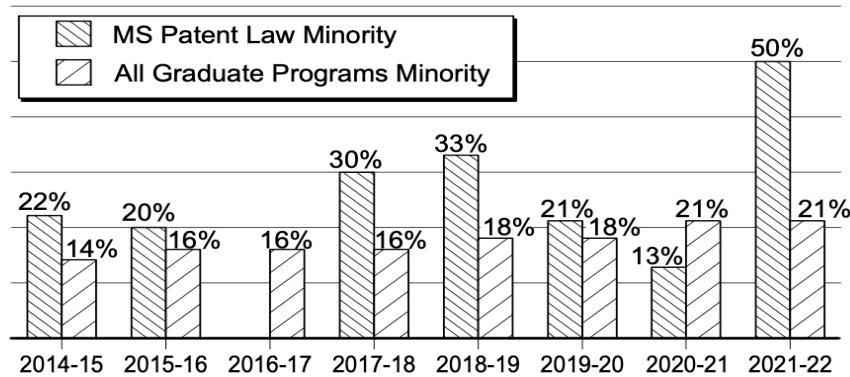
357. *See M.S.P.L. Class of 2021*, *supra* note 301.

in faculty promotion rates.³⁵⁸ The incoming class of students at UMN Law is 52 percent female, 26 percent LGBTQ+, and 25 percent students of color.³⁵⁹

The enrollment of female students averaged 50 percent of the UMN MS Patent Law degree program cohorts from 2014–2022, reaching 50 percent or more in academic years 2016, 2017, 2021, and 2022.³⁶⁰ Minority students have comprised at least 15 percent of the UMN MS Patent Law degree program cohorts in almost every academic year since 2015.³⁶¹ Figure 1 and 2 below show historical diversity data for students enrolled in the UMN MS Patent Law degree program.³⁶² Accordingly, the UMN MS Patent Law degree program has the potential to develop an even more diverse pipeline of students who aspire to become patent practitioners, which is a model for other educational institutions in the United States.³⁶³

Figure 1

UMN MS Patent Law Degree Program New Minority Enrollments v. UMN Graduate School (2014-2022)



358. See Joan T.A. Gabel, *Next Steps on Systemwide Strategic Planning: Metrics*, UNIV. OF MINN.: OFF. OF THE PRESIDENT 20 (Oct. 9, 2020), https://president.umn.edu/sites/president.umn.edu/files/2020-10/SWSP%20PPT_FINAL%20101520.pdf [https://perma.cc/CNK8-NXYV].

359. *Minnesota Law Welcomes One of the Most Diverse, Academically Accomplished J.D. Classes in Its History*, UNIV. OF MINN. L. SCH. (Aug. 29, 2021), <https://www.law.umn.edu/news/2021-08-29-minnesota-law-welcomes-one-most-diverse-academically-accomplished-jd-classes-its-history> [https://perma.cc/Z9ZR-92X7].

360. See *Patent Law (Twin Cities)*, UNIV. OF MINN., <https://apps.grad.umn.edu/stats/en/1230900.shtml> [https://perma.cc/EZ26-JGNF] (last visited Nov. 17, 2021).

361. See *id.*

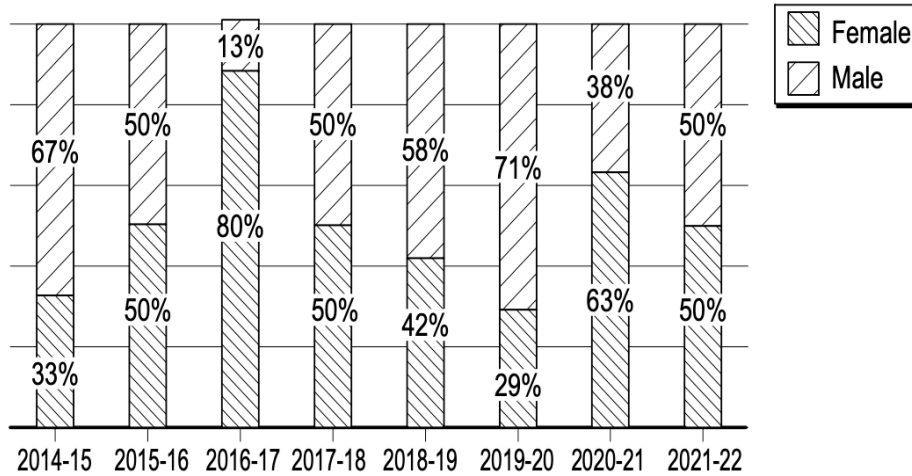
362. See *id.*

363. See *id.*

“Minority” includes citizens and permanent residents of African American, Asian-American, Hispanic/Chicano/Latino, American Indian, and Hawaiian/Pacific Islander Ethnicity.

Figure 2

**UMN MS Patent Law Degree Program New Enrollment
Male/Female Ratio (2014-2022)**



B. Removing Barriers Students Face at the USPTO

As stated previously, most students follow a singular path to become a patent practitioner: (1) obtain an undergraduate BS degree in engineering, (2) obtain a graduate JD degree from a school located in the United States, (3) pass the Registration Examination, and (4) become recognized as a Registered Patent Attorney.³⁶⁴ The majority of students face few barriers at the USPTO to become patent practitioners.³⁶⁵ However, a minority of students who are neither US citizens nor JD degree-seeking students (e.g., BS, BA, PhD, MS in Patent Law, LLM in Patent Law, MLS, etc.) and who should be eligible to become patent practitioners face barriers at the USPTO.³⁶⁶

364. See *supra* Section II.A.1. Many JD degree-seeking students first become Registered Patent Agents while enrolled in law school. See *supra* Section II.B.1 Upon graduation from a JD program, these students typically become admitted by a state bar, and after notifying the USPTO of their transfer in status become Registered Patent Attorneys. See *supra* Section II.A.1.

365. See *supra* Section II.A.1.

366. See *supra* Part III.

This Article suggests reducing the following barriers students face at the USPTO on the path to become patent practitioners: (1) interpretation of student visa status to sit for the Registration Examination, (2) the USPTO Law School Clinic Certification Program, and (3) the USPTO National Patent Application Drafting Competition. These barriers could be quickly and easily reduced (e.g., through amendment, guidance, or directive of the USPTO).³⁶⁷ The result will be expanding avenues for competent STE students who aspire to become patent practitioners, which more closely reflects the underlying diversity of the United States and which better connects with innovators.³⁶⁸

1. Admission to Registration Examination with Student Visa

Successful admission to the Registration Examination is required to become a patent practitioner.³⁶⁹ The General Requirements Bulletin for Admission to the Examination for Registration to Practice in Patent Cases Before the USPTO (General Requirements Bulletin or GRB) currently excludes law school students who are non-US citizens without Optional Practical Training (OPT) or Curricular Practical Training (CPT) but who may otherwise satisfy the legal, scientific, and technical training requirements for admission to the Examination.³⁷⁰ Admittedly, the USPTO is constrained by federal law regarding certain “benefits” to non-US citizens.³⁷¹ For example, Deferred Action for

367. See Letter from Andrei Iancu, Dir. & Under Sec’y of Com. for Intell. Prop., U.S. Pat. & Trademark Off., to Thom Tillis, Chairman, Senate Judiciary Comm., Christopher A. Coons, Ranking Member, Senate Judiciary, Comm., & Mazie Hirono, Senate Judiciary Comm., *supra* note 174 (“The USPTO continuously evaluates its operations and policies in order to identify potential improvements, including regarding the criteria for the registration examination. To that end, I have asked the USPTO evaluate whether a number of immediate changes can be made, and also whether other changes may be possible in the future.”).

368. See *supra* Section V.A.

369. See 37 C.F.R. § 11.7(b) (2021).

370. See GENERAL REQUIREMENTS, *supra* note 31, at 7; 37 C.F.R. § 11.6(a). The use of the term “alien” in 37 C.F.R. § 11.6 and the General Requirements Bulletin should be updated as per President Biden’s Executive Order, Restoring Faith in Our Legal Immigration Systems and Strengthening Integration and Inclusion Efforts for New Americans. Exec. Order No. 14,012, 86 Fed. Reg. 8,277 (Feb. 2, 2021) (directing use of language that is “[consistent] with our character as a Nation of opportunity and of welcome”). See also Memorandum from Jean King, Acting Dir., Dep’t of Just. (July 23, 2021) (on file with the Dep’t of Just.) (directing replacing the term “alien” with “Respondent, applicant, petitioner, beneficiary, migrant, noncitizen, or non-U.S. citizen”). For clarity, the term “alien” is used in these footnotes.

371. See GENERAL REQUIREMENTS, *supra* note 31, at 6–7 (“The contents of this guidance document do not have the force and effect of law and are not meant to bind the public in any way. This guidance is intended only to provide clarity to the public regarding existing requirements under the law or agency policies.”).

Childhood Arrivals (DACA) recipients could be denied admission to sit for the Registration Exam because of current federal benefits laws.³⁷²

As indicated earlier, a degree-seeking law student may be enrolled in law school on a student visa (i.e., F-1 visa status).³⁷³ Such a student may choose to become a patent practitioner with Limited Recognition.³⁷⁴ As a first step, such a non-US citizen residing in the United States could apply to take the Registration Examination.³⁷⁵ However, the USPTO may deny such a student admission to the Registration Examination because the USPTO deems their F-1 student visa status (without OPT or CPT) as not consistent “with the capacity of employment authorized by the USCIS.”³⁷⁶

By focusing on “capacity of employment authorized by the USCIS,” it appears the guidance in the GRB goes beyond what is required in the Code of Federal Regulations for a Registered Patent Attorney or Registered Patent Agent (i.e., “not inconsistent with the terms upon which the alien was admitted to, and resides in, the United States . . .”) and for Limited Recognition (i.e., “authorized by the United States Government to be employed or trained in the United States in the capacity of representing a patent applicant by presenting or prosecuting a patent application”).³⁷⁷ Admittedly, the GRB lacks the

372. *See id.*

373. *See Student Visa, supra* note 302 (“You must have a student visa to study in the United States.”).

374. *See* GENERAL REQUIREMENTS, *supra* note 31, at 8 (“A qualifying non-immigrant alien within the scope of 8 CFR § 274a.12(b) or (c) is not registered upon passing the examination. Such an applicant will be given limited recognition under 37 CFR § 11.9(b) if recognition is consistent with the capacity of employment or training authorized by the USCIS. Documentation establishing an applicant’s qualification to receive limited recognition must be submitted with the applicant’s application.”).

375. *Id.*

376. *Id.*; *see Student Visa, supra* note 302.

377. *Compare* GENERAL REQUIREMENTS, *supra* note 31, at 8 (explaining that an alien applying to take the Registration Examination must establish that recognition *is consistent with the capacity of employment authorized by the US Citizenship and Immigration Services*), with 37 C.F.R. § 11.6(a) (2021) (explaining that an alien may become a registered patent attorney if registration *is not inconsistent with the terms of the alien’s admittance to the United States* and the alien may continue to be a registered patent attorney *if registration does not become inconsistent with the terms of the alien’s continued residence in the United States*), 37 C.F.R. § 11.6(b) (explaining that an alien may become a registered patent agent if registration *is not inconsistent with the terms of the alien’s admittance to the United States* and the alien may continue to be a registered patent agent *if registration does not become inconsistent with the terms of the alien’s continued residence in the United States*), and 37 C.F.R. § 11.9(b) (explaining that an alien may become a patent agent with limited recognition *if the alien is authorized by the US government to be employed or trained in the United States to present or prosecute a patent application*). *But see* Catherine Lacavera v. Jon W. Dudas, 441 F.3d 1380, 1383 (Fed. Cir. 2006) (holding that the USPTO did not abuse its discretion by granting limited recognition and denying full

force and effect of law, and thus it is unable to bind the public in any way.³⁷⁸ But this interpretation in the GRB effectively denies an entire class of full-time law students lawfully residing in the United States and undergoing training in the study of patent law to ultimately represent patent applicants from sitting for the Registration Examination, notwithstanding their F-1 visa student status permitting them to do so.³⁷⁹

Just sitting for and passing the Registration Examination would not in itself entitle a student on an F-1 visa to become recognized with Limited Recognition (or as a Registered Patent Agent) to practice before the USPTO in patent matters.³⁸⁰ Rather, simply sitting for the Registration Examination should be consistent with the F-1 student visa since students, by definition, engage in study and take examinations.³⁸¹ Permitting F-1 visa holding students to sit for the Registration Examination may assist the student in finding employment (e.g., leading to OPT or an H1B visa sponsored by an employer) resulting in more competent, lower-cost practitioners who are more accessible to represent inventors in the US innovation ecosystem. It is acknowledged, if the F-1 visa holding student obtains a work visa (i.e., OPT or CPT), for example, by enrolling in a course such as an internship with a law firm, then they should be able to sit for the Registration Examination since the F1 visa with OPT is not inconsistent with the capacity of employment authorized by the USCIS.³⁸²

A counterpoint to allowing these F-1 visa-holding students to at least sit for the Registration Examination but not become registered is

registration to a nonimmigrant alien); *Hsuan-Yeh Chang v. Kappos*, 890 F. Supp. 2d 110, 116–17 (D.D.C. 2012) (holding that the USPTO did not abuse its discretion by denying full registration to an alien who was authorized for employment in two-year increments because permitting the alien to represent clients in matters that typically take longer than two years would be inconsistent with the terms upon which the alien resides in the United States).

378. See GENERAL REQUIREMENTS, *supra* note 31, at 1 (“This guidance is intended only to provide clarity to the public regarding existing requirements under the law or agency policies.”); see also *Premysler v. Lehman*, 71 F.3d 387, 390 (Fed. Cir. 1995) (finding that the General Requirements are meant to explain ambiguous terms in legal enactments); *American Hosp. Ass’n. v. Bowen*, 834 F.2d 1037, 1045 (D.C. Cir. 1987) (“[T]he General Requirements do not bind the public to new regulations that were not subject to notice and comment . . .”).

379. See GENERAL REQUIREMENTS, *supra* note 31, at 8. A decision not to permit an applicant from sitting for the Registration Examination is appealable. See 37 C.F.R. § 41.37. An applicant may petition the OED Director for review of the decision under 37 C.F.R. § 11.2(c). Still further an applicant may file a petition to suspend the rules and requesting a waiver of regulations regarding the examination under 37 C.F.R. § 11.3(a).

380. See *id.* § 11.14.

381. See *Student Visa*, *supra* note 302.

382. See GENERAL REQUIREMENTS, *supra* note 31, at 3.

such a process may open the floodgates to those individuals and companies abroad (i.e., patent search firms) who may advertise that they passed the Registration Examination and are therefore somehow more qualified. In other words, the United States could be inundated with thousands of non-US citizens from abroad advertising they “passed the patent bar” (but are not registered), which could be misleading to the public. However, this potential risk could be minimized by: (1) permitting only students on an F-1 visa who lawfully reside in the United States to sit for the Registration Examination (without CPT or OPT); (2) continuing to clearly identify who is and who is not a patent practitioner on the register of Registered Patent Attorneys, Registered Patent Agents and those recognized with Limited Recognition.³⁸³

The barrier to students enrolled in a US law school and lawfully residing in the United States (i.e., F1 student visa without OPT or CPT) to become a patent practitioner could be reduced by amending the General Requirements Bulletin at Part III (Scientific and Technical Training Requirements for Admission to the Examination) Section E (Eligibility of Aliens) as follows (with additions shown in underline format and deletions shown in ~~striketrough~~ format):

~~An alien~~ A non-US citizen residing in the United States may apply to take the registration examination. To be admitted to the examination, an applicant must establish that recognition is consistent with the capacity of employment or training as evidenced by a student visa to study law or a scientific or technical field in the United States authorized by the United States Citizenship and Immigration Services (USCIS). The evidence must include a copy of both sides of any study or work or training authorization and copies of all documents submitted to and received from the USCIS regarding admission to the United States and a copy of any documentation submitted to the US Department of Labor.³⁸⁴

The above proposed changes to the GRB would expand the pool of students who could sit for the Registration Examination.³⁸⁵ This is

383. The OED of the USPTO maintains a register of active patent practitioners who are eligible to represent others before the US Patent and Trademark Office in patent matters; individuals not listed on the register are generally unable to represent others before the US Patent and Trademark Office in patent matters. See *Find a Patent Practitioner*, U.S. PAT. & TRADEMARK OFF., <https://oedci.uspto.gov/OEDCI/practitionerSearchEntry> [<https://perma.cc/RW4W-7BZ8>] (Nov. 4, 2021).

384. See GENERAL REQUIREMENTS, *supra* note 31, at 7–8.

385. See *id.*

an important change that could result in a higher number of non-US citizens who come to the United States for their secondary education and choose to stay and join the patent field, which increases the United States' human capital and benefits the US innovation ecosystem. The current requirement that a non-US citizen aspiring to be a patent practitioner first establish a capacity of employment authorized by the USCIS has the potential to dissuade qualified applicants because it extends the timeline before they can begin work.³⁸⁶ If a non-US citizen wants to become a patent practitioner in the United States, that individual needs to obtain USCIS work authorization, and pass the Registration Examination, a process that can last more than a year if these events have to happen sequentially.³⁸⁷ Instead, an aspiring patent practitioner can shorten the overall time requirement via the proposed change to the GRB as above.³⁸⁸ At worst, this proposed change results in a number of students on F-1 visas paying to sit for the Registration Examination, none of whom end up becoming patent practitioners because they do not obtain USCIS work authorization. At best, this change results in more students on F-1 visas learning about the patent field through their schooling, choosing to sit for the Registration Examination, and then seeking out USCIS approval to stay in the United States and work as patent practitioners. In that case, the patent field would benefit from increased diversity as more international students become patent practitioners; additionally, the US innovation ecosystem would benefit from the increased diversity for the reasons explored above.³⁸⁹

2. Law School Clinic Certification Program

The USPTO Law School Clinic Certification Program (Clinic Program) allows law school students to practice patent law before the USPTO under a faculty clinic supervisor's guidance.³⁹⁰ Fifty-nine law schools participate in the Clinic Program to provide patent or trademark legal services pro bono to the public, including inventors,

386. *Id.*

387. *Id.*

388. *Compare id.* (listing requirements to becoming a patent practitioner that could take more than one year to fulfill if done sequentially), *with supra* text accompanying note 384 (broadening the list of requirements to become a patent practitioner so that various documents could satisfy multiple requirements).

389. *See supra* Part I.

390. *Law School Application Packet 2020-2021 Expansion*, U.S. PAT. & TRADEMARK OFF. 2, https://www.uspto.gov/sites/default/files/documents/2020_Law_School_Application_Packet.pdf [<https://perma.cc/8DHV-CST6>] (last visited Nov. 20, 2021).

entrepreneurs, and small businesses.³⁹¹ This is a worthy program which benefits both the public and students who serve in the Clinic Program.³⁹²

The 2020–21 certification for the Clinic Program focuses on JD degree-seeking students, thus excluding students who are otherwise eligible to become patent practitioners.³⁹³ As indicated earlier, being a JD degree-seeking student is not the only path to become a patent practitioner.³⁹⁴ For example, a BS, MS, or PhD student may enroll in law school courses while “matriculated” in an institutional unit other than the law school (e.g., a university of engineering).³⁹⁵ Further, an MS in Patent Law, Masters of Law, or LLM degree-seeking student may be enrolled in the law school itself, taking the same law school courses as JD degree-seeking students without “successfully complet[ing] his or her first year of law school.”³⁹⁶

The Clinic Program is well suited for students seeking to become patent practitioners, even if they do not obtain a JD degree to become patent attorneys.³⁹⁷ Non-JD degree-seeking students may eventually become patent practitioners permitted to consult with or advise clients who are contemplating filing patent applications with the USPTO, including those services reasonably necessary and incident to preparing and prosecuting patent applications before the USPTO.³⁹⁸ These services include considering the advisability of relying upon alternative forms of protection available under state law and drafting an assignment in some circumstances.³⁹⁹

391. *Id.*

392. *See id.*

393. *See id.* at 7 (requiring certification that all participating students have completed their first year of law school).

394. *See supra* Section II.B.

395. *See, e.g., Intellectual Property and Technology Proseminar, supra* note 270 (permitting undergraduate students at the University of Minnesota to enroll in an intellectual property law course); *Curriculum & Requirements, supra* note 316 (permitting master’s student at the University of Minnesota to enroll in various patent and intellectual property law courses).

396. *Compare Law School Application Packet 2020-2021 Expansion, supra* note 390, at 7 (requiring all Clinic Program participants to “successfully complete[] his/her first year of law school” before participating in the Program), *with* University of Minnesota Law School, *supra* note 327 (explaining that students in the Master of Science in Patent Law program are enrolled in the law school and take law school classes), *LL.M. in Patent Law*, UNIV. OF MINN. L. SCH., <https://law.umn.edu/academics/degree-programs/llm-patent-law> [<https://perma.cc/EFC2-399Y>] (last visited Nov. 20, 2021) (explaining that LLM students will take traditional law school classes), *and Intellectual Property Concentration, supra* note 311 (listing the law school courses that students pursuing a Master of Legal Studies degree must complete).

397. *See Law School Application Packet 2020-2021 Expansion, supra* note 390.

398. *See* 37 C.F.R. § 11.5(b)(1) (2021).

399. *Id.*

This systemic barrier students face at the USPTO to become patent practitioners could be reduced by amending the Law School Clinic Certification Program at Section IV (Program Requirements) Part B (Law School Dean's Certifications),⁴⁰⁰ as follows (emphasis in original, with additions shown in underline format and deletions shown in ~~strikethrough~~ format):

The law school dean, or one authorized to act for the dean, must certify that each participating law school clinic student is matriculated in the law school or an affiliated undergraduate or graduate school and is in good standing with the law school or affiliated undergraduate or graduate school.

Specifically, the law school dean, or one authorized to act for the dean, must certify as to the following regarding each participating law school clinic student in the Program:

1st year of law school or equivalent completed – certify that each participating law school clinic student has successfully completed his/her first year of law school, or the equivalent, or 12 credits directed to the preparation and prosecution of patent applications before the Office.

Ethics code/moral character – certify that each participating law school clinic student is in compliance with the law school's ethics code. The law school dean, or one authorized to act for the dean, must attest to each participating law school clinic student's good moral character by certifying that the student is in compliance with the law school's ethics code. The USPTO reserves the right to review the requirements and may discontinue the law school clinic's eligibility if discrepancies are discovered.

Conflict of interest – certify that the school has a process that ensures that no conflicts exist in the representation of clinic

400. Amendment to the Code of Federal Regulations would also be required to reduce this barrier. *See id.* § 11.16 (describing requirements for admission to the USPTO Law School Clinic Certification Program including:

(i) be[ing] enrolled in a law school that is an active participant in the USPTO Law School Clinic Certification Program; (ii) be[ing] enrolled in the patent practice area of a clinic of the participating law school; and (iii) hav[ing] successfully completed at least one year of law school or the equivalent.

Amendment of 37 C.F.R. § 11.16 may require rule-making procedures under 5 U.S.C. § 552, however, interpretive rules, under 5 U.S.C. § 553, do not invoke the notice and comment requirements in 5 U.S.C. § 552.

clients. This is a continuing obligation throughout participation in the Program.

The law school, through the law school dean, or one authorized to act for the dean, maintains a duty to update OED as to each participating law school clinic student's status should it change during the student's participation in the clinic in the Program.

The dean's certifications are required any time new students are added to the clinic for participation therein.⁴⁰¹

The above changes expand the eligibility criteria for the Clinic Program and would enable non-JD students to participate in the program, provided they have completed the required twelve credits directed to the preparation and prosecution of patent applications before the office.⁴⁰² This proposed modified version of the program would continue to require a degree of expertise in patent law, which helps maintain the quality of legal services provided by participating students while still opening the program to the non-JD students who aspire to be patent practitioners.⁴⁰³ It is possible, even with the amended eligibility criteria, the only students who would participate in the program are those who already know of the patent field and want to be patent practitioners. However, it is also possible broadening the eligibility requirements would result in the program being advertised to students who have the requisite technical background but are not currently pursuing a JD degree. In sum, expanding the eligibility requirements in this way either at worst makes no difference or at best increases the visibility of the patent field to non-JD students, without compromising the quality of the program.

3. Law School Patent Drafting Competition

The USPTO National Patent Drafting Competition (Competition) introduces law students to issues arising in US patent law and develops their patent application drafting, amending, and prosecution skills.⁴⁰⁴ This USPTO program helps students become

401. See *Law School Application Packet 2020-2021 Expansion*, *supra* note 390, at 7–8.

402. *Cf. id.* (listing the current eligibility criteria for the Law School Clinic Certification Program).

403. *Cf. id.* (limiting participation in the Law School Clinic Certification Program only to JD-seeking students).

404. *National Patent Application Drafting Competition*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/about-us/uspto-locations/dallas-tx/national-patent-application-drafting-competition> [<https://perma.cc/M4N5-CHBS>] (Sept. 21, 2021, 10:17 AM). The Competition is an

competent to advise and assist patent applicants in preparing and prosecuting patent applications.⁴⁰⁵ In only its second year as a nationwide competition, the number of participating teams increased to fifty-one, exposing students to the critical practice of patent application drafting.⁴⁰⁶

The rules of the 2022 Competition focus on law school students, potentially excluding students who are otherwise eligible and who aspire to become patent practitioners; the rules recite in part (emphasis added):

5. The Competition is open to teams comprised of two to four *law school students* and one coach affiliated with the *law school*.
6. Students must be enrolled, on a full-time or part-time basis, *at a law school*, provided that:
 - a. the student has not been admitted or licensed to practice law in any jurisdiction;
 - b. the student, if a registered patent practitioner (i.e. a patent agent), has a patent registration number issued on or after January 1, 2019;
 - c. the student is *enrolled at the institution* during the 2021–22 academic year; and
 - d. the student is not currently an employee of the USPTO.
7. All team members must be from the same *law school* and the team coach must be affiliated with the *law school*. The same team must represent the school at each phase of the Competition, including search, preparation of the written application materials, and appearances at the regional and national rounds of the Competition.
8. In addition to JD and LLM programs, *students are eligible for the Competition if enrolled in a program directed to Intellectual Property and operated under the auspices of a law school, including Master’s Programs.*⁴⁰⁷

For example, a student pursuing a BS, MS, or PhD degree may be enrolled in non-law school coursework at an educational institution but still be excluded from participating in the Competition.⁴⁰⁸ Such

expansion of the International Patent Drafting Competition and will enter its third year in 2022. See Dennis Crouch, *National Patent Application Drafting Competition*, PATENTLY-O (Nov. 18, 2019), <https://patentlyo.com/patent/2019/11/national-application-competition.html> [<https://perma.cc/QQV3-7653>].

405. See Crouch, *supra* note 404. The University of Minnesota Law School incorporated the Competition into its curriculum as a 2-credit elective course. See *Patent Drafting and Oral Advocacy Competition Team - 7127*, UNIV. OF MINN. L. SCH., <https://www.law.umn.edu/course/7127/fall-2020/patent-drafting-and-oral-advocacy-competition-team/turoski-christopher-m> [<https://perma.cc/S9XB-LK4Y>] (last visited Nov. 4, 2021).

406. See *USPTO Announces Winners of the 2021 National Patent Drafting Competition*, U.S. PAT. & TRADEMARK OFF. (Apr. 19, 2021) <https://www.uspto.gov/about-us/news-updates/uspto-announces-winners-2021-national-patent-drafting-competition> [<https://perma.cc/94UH-2E27>].

407. *2022 USPTO National Patent Application Drafting Competition Rules*, *supra* note 185.

408. See *id.*

coursework may include, for example, an internship, externship, or an independent learning experience at a patent prosecution firm, technology transfer office,⁴⁰⁹ or even at the USPTO.⁴¹⁰ A general example of such coursework includes a graduate degree-seeking student pursuing a MS degree in an STE field.⁴¹¹ A specific example includes a student seeking a MS in Management of Technology offered by the University of Minnesota College of Science and Engineering and enrolled in the course MOT 8940 - Managing Intellectual Property directed to patent and intellectual property protection.⁴¹² Thus, the rules of the Competition appear to exclude MS graduate students from the Competition who would otherwise meet the technical and competence requirements to practice in patent matters before the USPTO.⁴¹³

While the eligibility requirements benefit future Registered Patent Attorneys (and arguably make the program easier to administer by reducing the number of potential contestants), it comes at the cost of excluding talented non-JD students who will, or could be patent practitioners one day.⁴¹⁴ As discussed above, enrolling in “law school” coursework or, under the “auspices of a law school,” is not the only path

409. See Kevin Coss, *OTC Internship Offers Tech Transfer Experience*, UNIV. OF MINN. (Jan. 23, 2014), <https://research.umn.edu/inquiry/post/otc-internship-offers-tech-transfer-experience> [<https://perma.cc/VSX3-P9LL>] (“As research institutions continue to establish themselves as leaders in tech transfer, the University of Minnesota is giving graduate and professional students a way to gain industry experience and help get university discoveries out the door. . . . [Interns’] duties include helping assess the commercial potential of new technology and conducting patent searches.”).

410. See, e.g., *The Patent Experience Extern Program*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/sites/default/files/documents/PEEP%20Brochure%202018%20Individual%20Pages.pdf> [<https://perma.cc/79M5-YB9B>] (last visited Nov. 21, 2021).

411. See Coss, *supra* note 409.

412. See *University Catalogs: MOT 8940 - Managing Intellectual Property*, UNIV. OF MINN., <https://onestop2.umn.edu/pcas/viewCatalogCourse.do?courseId=787921> [<https://perma.cc/ZJB2-B43N>] (Nov. 4, 2021).

413. Compare 2022 USPTO National Patent Drafting Competition Rules, *supra* note 185 (limiting participation in the National Drafting Competition to students enrolled in programs operated under the auspices of a law school), with GENERAL REQUIREMENTS, *supra* note 31, at 3 (explaining that the technical and competence requirements to practice in patent matters before the USPTO are satisfied by, among other things, completing a master’s degree at an accredited US college or university).

414. Compare 2022 USPTO National Patent Application Drafting Competition Rules, *supra* note 185 (limiting participation in the National Drafting Competition to students enrolled in programs operated under the auspices of a law school), with GENERAL REQUIREMENTS, *supra* note 31, at 3 (explaining that the technical and competence requirements to practice in patent matters before the USPTO are satisfied by, among other things, completing a master’s degree at an accredited US college or university).

to become a patent practitioner.⁴¹⁵ For example, most students with a simple BS degree in a STE field, or many former USPTO patent examiners may become patent practitioners without attending a single “law school” class or any program under the “auspices of a law school.”⁴¹⁶ Excluding non-law school undergraduate and graduate STE students from the Competition might be smart as a matter of competition, but excluding all non-law school students from developing expertise hurts the Competition, and consequently, the field.⁴¹⁷ These are the type of STE students who are technically competent and who may follow an alternative non-JD path to become a patent practitioner (i.e., Registered Patent Agent).⁴¹⁸

This barrier students face at the USPTO to become a patent practitioner could be reduced by amending Rules 6 and 8 of the Competition as follows (with additions shown in underline format and deletions shown in ~~striketrough~~ format):

5. The Competition is open to teams comprised of two to four law school students and one coach affiliated with the law school.

6. Students must be enrolled, on a full-time or part-time basis, at a law school, provided that:

a. the student has not been admitted or licensed to practice law in any jurisdiction within the United States other than the USPTO;

b. the student, if a registered patent practitioner (i.e. a patent agent), has a patent registration number issued on or after January 1, 2019;

c. the student is enrolled at the institution during the 2021-22 academic year; and

d. the student is not currently an employee of the USPTO.

7. All team members must be from the same law school and the team coach must be affiliated with the law school. The same team must represent the school at each phase of the Competition, including search, preparation of the written application

415. See, e.g., *Patent Agent vs Patent Attorney: Everything You Need to Know*, supra note 97.

416. See 37 C.F.R. § 11.7(d) (2021) (allowing waiver of the Registration Examination for former USPTO employees under certain circumstances).

417. See, e.g., *Patent Agent vs Patent Attorney: Everything You Need to Know*, supra note 97 (explaining the difference between a patent agent and patent attorney is the capacity to practice law, not prosecute patents).

418. See *id.*

materials, and appearances at the regional and national rounds of the Competition.

8. In addition to students enrolled in JD and LLM programs at a law school, students are eligible for the Competition if enrolled in a program, including Master's Programs directed to Intellectual Property and operated under the auspices of a law school, including Master's Programs, or students enrolled in a course directed to the preparation or prosecution of patent applications offered by a domestic academic educational institution.⁴¹⁹

The above changes provide a middle ground by expanding the pool of eligible competitors to cover non-JD students while still requiring some law-specific coursework, as well as allowing non-domestic LLM and other F-1 visa-holding students to participate.⁴²⁰ This balance helps maintain the Competition's quality while still opening the door to students who could one day become patent practitioners but are not pursuing a JD degree.⁴²¹ Spots in the Competition are limited, so it is likely the vast majority of contestants would still be JD students.⁴²² Nevertheless, the current eligibility criteria impact not only who can participate in the Competition, but also to whom the Competition is advertised.⁴²³ Expanding the eligibility criteria in this way could increase the program's visibility among STE students and hence, attract a greater number of those students to the patent field. Therefore, the above change is likely to increase awareness of the patent field amongst non-JD STE students without significantly changing the Competition or those who tend to participate in it.

The author recognizes and appreciates prior progress made by the USPTO in expanding the pool of students eligible to participate in the Competition. For example, the 2020 Competition Rules,⁴²⁴ and the original 2021 Competition Rules, excluded LLM degree-seeking

419. See *2022 USPTO National Patent Drafting Competition Rules*, *supra* note 185 (emphasis added).

420. Cf. *2022 USPTO National Patent Application Drafting Competition Rules*, *supra* note 185 (limiting participation in the Patent Drafting Competition to students pursuing a JD).

421. Cf. *id.* (limiting participation in the Patent Application Drafting Competition to students pursuing a JD).

422. See *id.* at 5.

423. See *id.* at 2.

424. See *2020 USPTO National Patent Drafting Competition Rules*, U.S. PAT. & TRADEMARK OFF. 2, https://drive.google.com/open?id=1a0z_irlDNG3gcaq46Se_7L-RpAKy6y90 [<https://perma.cc/EX85-RHR4>] (Dec. 3, 2019) (excluding any student seeking "an advanced degree in law" from the National Patent Drafting Competition).

students.⁴²⁵ The amended 2021 Competition Rules expanded eligibility and permitted LLM students to participate in the competition in some circumstances.⁴²⁶ This expanded eligibility for LLM students was continued in the 2022 Competition Rules.⁴²⁷ Additionally, the 2020 Competition Rules permitted other non-JD degree-seeking law students, such as Master of Laws and Master of Science of Patent Law students, so long as they were enrolled in a “degree program” at a law school.⁴²⁸ However, the original 2021 Competition Rules excluded these master’s students.⁴²⁹ Fortunately, the Competition Rules were updated and expanded to permit participation in the competition of all students enrolled in a law school “class.”⁴³⁰ The 2022 Competition Rules, however, restrict participation in the Competition only to students enrolled in a “law school.”⁴³¹ Accordingly, it appears any barrier students face at the Competition is unintentional and continuously being lowered by the USPTO.

425. See *2021 USPTO National Patent Drafting Competition Rules*, U.S. PAT. & TRADEMARK OFF. 4, <https://web.archive.org/web/20201016190213/https://www.uspto.gov/sites/default/files/documents/PDCRules.pdf> (last visited Nov. 22, 2021) (permitting only students who are enrolled “in a *Juris Doctor* program at a law school” to participate in the National Patent Drafting Competition).

426. See *id.* (permitting students “who are enrolled, on a full-time or part-time basis, in any law school class, provided that: (a) the student has not been admitted or licensed to practice law in any jurisdiction”).

427. See *2022 USPTO National Patent Application Drafting Competition Rules*, *supra* note 185 (“Students must be enrolled, on a full-time or part-time basis, at a law school, provided that: a. the student has not been admitted or licensed to practice law in any jurisdiction.”).

428. See *2020 USPTO National Patent Drafting Competition Rules*, *supra* note 424 (permitting students who are enrolled “in a degree program at a law school” to compete in the Competition).

429. See *id.*

430. See *2021 USPTO National Patent Drafting Competition Rules*, *supra* note 321 (permitting students who are enrolled “in any law school class” to compete in the National Patent Drafting Competition).

431. See *2022 USPTO National Patent Drafting Competition Rules*, *supra* note 185 (permitting students who are enrolled “at a law school” to compete in the National Patent Drafting Competition).

VI. CONCLUSION

Developing and implementing effective ways to promote diversity in the corps of intellectual property attorneys and agents who represent them is one of the primary challenges facing the patent bar.⁴³² One solution is expanding avenues for competent STE students who aspire to become patent practitioners.⁴³³ Organizations (e.g., the USPTO) could accomplish this by increasing their support for students entering the field from the alternative non-JD degree path.⁴³⁴ At the undergraduate level, such support could include promoting courses that educate students about intellectual property, incorporating intellectual property modules into existing courses, and providing practical, experiential opportunities.⁴³⁵ To support other non-JD students, Organizations could expand access to training programs and CLEs, thereby increasing the number of offerings which provide the formality, structure, and content necessary for effective education.⁴³⁶ Additionally, there is much Organizations could do to support students enrolled in MS Patent Law degree programs.⁴³⁷ In addition to supporting students following alternative paths to becoming patent practitioners, the diversity of patent practitioners may be increased by removing barriers facing students at the USPTO.⁴³⁸ For example, students graduating from a US educational institution with a BS degree in STE comprise a diverse body of students from around the world, but the international students within these programs are often prevented from sitting for the Registration Examination because of their F-1 visa status.⁴³⁹ This restriction could be removed by an amendment to the General Requirements Bulletin for Admission to the Examination for Registration to Practice in Patent Cases before the USPTO, thereby diversifying the pool of students eligible to sit for the Registration Examination.⁴⁴⁰ In addition, to further increase alternative non-JD degree path students' exposure to patent law, the USPTO could open

432. See 2019 REPORT, *supra* note 167 (finding that only 19.7 percent of the intellectual property bar is female and 86.5 percent is white).

433. See *Spector & Brand*, *supra* note 59.

434. See, e.g., *Student Programs*, *supra* note 226.

435. See, e.g., *University of Minnesota Twin Cities 2020-22 Undergraduate Courses*, *supra* note 265.

436. See, e.g., *NAPP Mentoring Program Is Officially Open for Business!*, *supra* note 285.

437. See discussion *supra* Section V.A.II.e.

438. See Exec. Order No. 13,985, 86 Fed. Reg. 7,009 (Jan. 20, 2021).

439. See discussion *supra* Section V.B.I.

440. See *id.*

its Clinic Programs to these qualified students and permit them to compete in the USPTO National Patent Drafting Competition.⁴⁴¹

Lack of diversity in the field of patent law is a challenging issue.⁴⁴² This must be solved to make the field more accessible to diverse groups and maximize our country's innovation potential.⁴⁴³ Improving awareness of career opportunities, adapting coursework, and increasing experiential learning opportunities are all ways Organizations could play a role in achieving these goals.

441. See discussion *supra* Sections V.B.II–III.

442. See Spector & Brand, *supra* note 59.

443. See *id.*