Re-Thinking Patent Bar Admission: Which Bag of Tools Rules?

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Isn't it strange how princes and kings,
and clowns that caper in sawdust rings,
and common people, like you and me,
are builders for eternity?

Each is given a list of rules;
a shapeless mass; a bag of tools.
And each must fashion, ere life is flown,
A stumbling block, or a Stepping-Stone.
R. Lee Sharpe [1870-1950]

I. INTRODUCTION

The need to periodically review, and update, the requirements for admission to the patent bar is readily apparent, particularly in this time of rapid technological change and case law evolution that effectively widens the swath of patentable subject matter. Accordingly, the time is now ripe for the United States Patent Office (herein "PTO" or "Patent Office") to consider expanding the permissible areas of expertise that will qualify an applicant to sit for the Patent Bar Examination. Hand-in-hand with such possible expansion is the need to consider whether new eligibility requirements should be delineated to

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help insure that candidates seeking admission to the patent bar are well-prepared to competently begin their career of practice before the Patent Office during this era of increasingly complex technology developments.

What is perhaps less apparent, but nonetheless has been previously recognized, is the need for the Patent Office to consider whether it needs to promulgate any new requirements for admission to the Patent Bar in accordance with the rule-making obligations of the Administrative Procedures Act ("APA") applicable to federal agencies.[3] The Patent Office has implicitly acknowledged the need to comply with the APA's notice and comment provisions, at least when policy changes are at stake, by virtue of its allusion to the obligation in its recently-proposed recertification requirements applicable to attorneys and agents already admitted to practice before the PTO.[4]

This article will explore the history of the Patent Office's role in regulating admission to patent practice, and review the requirements for admission to practice before foreign patent offices, as a prelude to the authors' proposal for change in the domestic requirements. That proposal envisions (a) expanding the scope of technical backgrounds that qualify for sitting for the patent bar exam, and (b) implementing a one-year patent apprenticeship program as a pre-condition for sitting for the exam.

II. History of the PTO's Regulation of Patent Practitioners

The Patent Clause of the United States Constitution provides that Congress shall have the 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."[5] Congress shall have the power to take all steps necessary and proper to carry out the objectives of the Patent Clause, leading to the establishment of the PTO and the Patent Act that governs it.[6]

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3 Michelle J. Burke and Thomas G. Field, Jr., Promulgating *Requirements For Admission to Prosecute Patent Applications*, 36 IDEA 145, 157 (1995-1996); 77 J. Pat. & Trademark Off. Soc'y 369, 379 (1995). *But see* the *Premysler* case *infra* note 75 regarding the Federal Circuit's observation that the PTO can update its technical criteria for patent bar admission in its interpretative discretion for existing regulations relating to the technical competence of patent bar candidates.

4 The PTO's proposed regulations were published on December 12, 2003 for 37 C.F.R. § 11.12 notice and comment. 68 Fed. Reg. 69442, 69529 (Dec. 12, 2003). *See also* Dale L. Carlson, William B. Slate and Carolyn J. Vacchiano, *"Are We Certifiable?" Redux – A Strategic Plan for Maintaining Patent Practice Competence*", 85 JPTOS, 287, 300 (April 2003).

5 United States Constitution Article I, § 8, Cl. 8.

6 United States Constitution Article I, § 8, Cl. 18.

In the early 1800s, anyone, both lawyers and non-lawyers alike, could prepare and prosecute patent applications on behalf of patent applicants before the PTO.[7] Unfortunately, these early patent practitioners were sometimes responsible for deceptive advertising and victimization of inventors.[8] Congress responded to these unscrupulous behaviors in 1861 by establishing the power of the Commissioner of Patents (the "Commissioner") to regulate patent practitioners who, "for gross misconduct [] may refuse to recognize any person as a patent agent, either generally or in a particular case."[9] In 1869, the Commissioner exercised this authority by providing that "[a]ny person of intelligence and good moral character may appear as the attorney in fact or agent of an applicant upon filing proper power of attorney."[10] In continuation of its efforts, in 1899 the Commissioner first required registration of all individuals prosecuting patent applications before the PTO.[11] These registration requirements were subsequently amended in 1922 to provide for recognition of both patent agents and patent attorneys, the establishment of a patent bar, and the establishment of a higher standard of qualifications for registration.[12]

Although as far back as 1915 there had been suggestions that the privilege to practice before the PTO should be granted only after examination, the Commissioner commented in his 1915 annual report that:

> [T]his requirement would be too severe, as many persons not specially trained in the law and without any particular educational advantages may by careful study of the practice and of the useful arts learn adequately to prosecute applications. Fundamentally knowledge of the invention is more important than knowledge of the rules and is often possessed by men of a type of mind which does not acquire legal knowledge readily.[13]

It was not until 1938 that both lawyers and non-lawyers were required to pass a rigorous examination, which became known as the patent bar examination, before being permitted to practice before the PTO.[14]

Today, 35 U.S.C. § 2(b)(2)(D) grants the PTO the authority to govern the recognition and conduct of practitioners and states in part that

7 *Sperry v. State of Florida*, 373 U.S. 379, 388 (1963).
8 Id. at 390.
9 Id. at 388.
10 Id. at 388-9.
11 Id. at 390.
12 Id. at 390-1.
13 Id. at 392.
14 37 C.F.R. § 1.341 (c).

the PTO "may require [bar applicants], before being recognized as representatives of [patent] applicants, to show that they are of good moral character and reputation and are possessed of the necessary qualifications to render to [patent] applicants valuable service, advice, and assistance in the presentation or prosecution of their applications or other business before the Office."[15]

37 C.F.R. § 10.7 sets out the requirements for registration before the PTO based on the criteria set forth in 35 U.S.C. § 2(b)(2)(D). Applications for registration must be made to the Commissioner and the applicant must establish to the satisfaction of the Director of the Office of Enrollment and Discipline (the "Director" and the "OED", respectively) the following requirements:

(a)(2)(i) he or she is of good moral character and repute;

(a)(2)(ii) Possessed of the *legal, scientific, and technical qualifications necessary to enable him or her to render applicants for patents valuable service*; and

(a)(2)(iii) Is otherwise competent to advise and assist applicants for patents in the presentation and prosecution of their applications before the Office.[16]

The applicant must also provide "satisfactory proof of good moral character and repute and of sufficient basic training in scientific and technical matters," and "must take and pass an examination which is held from time to time."[17] The taking of the patent bar examination "may be waived in the case of any individual who has actively served for at least four years in the patent examination corps of the Office."[18]

The PTO publishes and periodically updates a bulletin called the *General Requirements for Admission to the Examination for Registration to Practice in Patent Cases before the U.S. Patent and Trademark Office* (hereinafter the "bulletin"). The bulletin, based on the criteria set forth in 37 C.F.R. § 10.7(a), describes the scientific and technical training required to sit for the patent bar examination.

The technical requirements can be satisfied in one of three ways according to the most recent bulletin published on December 9, 2004.[19] Under Category A, the technical requirement may be satisfied by

15 35 U.S.C. § 2 (b) (2) (D) (2003).
16 37 C.F.R. § 10.7 (a) (2) (1995).
17 37 C.F.R. §10.7 (b) (1995).
18 Id.
19 See *"General Requirements for Admission to the Examination for Registration to Practice in Patent Cases before the U.S. Patent and Trademark Office,"* dated December 9, 2004, available at http://www.uspto.gov/web/offices/dcom/olia/oed/gbr09dec04.htm.

having a bachelor's degree in a recognized technical subject from an accredited U.S. college or university or the equivalent to a bachelor's degree from a foreign university.[20] The thirty-two recognized technical subjects are all science and engineering related. It should also be noted that computer science degrees must be from a specially accredited institution or program.[21]

Under Category B, an applicant with a bachelor's degree in a subject other than one of those listed "must establish that he or she possesses scientific and technical training equivalent to that received at an accredited U.S. college or university for a bachelor's degree in one of the subjects listed in Category A."[22] Four options are available to the applicant to establish such equivalence, each requiring a showing of a specified number of semester hours in physics, chemistry, engineering or biological sciences.[23] The Director justifies the criteria of Category B on the basis that the "vast majority of patent applications relate to chemistry, physics, and engineering, [thus] it is reasonable to require patent practitioners having degrees in other subjects (i.e., one that is not

20 Id. at 3. The following are listed as recognized technical subjects: biology, biochemistry, botany, computer science, electronics technology, food technology, general chemistry, marine technology, microbiology, molecular biology, organic chemistry, pharmacology, physics, textile technology, aeronautical engineering, agricultural engineering, biomedical engineering, ceramic engineering, chemical engineering, civil engineering, computer engineering, electrical engineering, electrochemical engineering, engineering physics, general engineering, geological engineering, industrial engineering, mechanical engineering, metallurgical engineering, mining engineering, nuclear engineering, and petroleum engineering.

21 Id. Acceptable computer science degrees must be accredited by the Computer Science Accreditation Commission (CSAC) of the Computing Sciences Accreditation Board (CSAB), or the Computing Accreditation Commission (CAC) of the Accreditation Board for Engineering and Technology (ABET), on or before the date the degree was awarded.

22 Id. at 4.

23 Id. The four options available under Category B are as follows:

Option 1: 24 semester hours in physics. Only physics courses for physics majors will be accepted.

Option 2: 32 semester hours in a combination of the following:
- 8 semester hours of chemistry or 8 semester hours of physics, and
- 24 semester hours in biology, botany, microbiology, or molecular biology.
- The 8 semester hours in chemistry or 8 semester hours of physics must be obtained in two sequential semesters, each semester including a lab. Only courses for science or engineering majors will be accepted.

Option 3: 30 semester hours in chemistry. Only chemistry courses for chemistry majors will be accepted.

Option 4: 40 semester hours in a combination consisting of the following:
- 8 semester hours of chemistry or 8 semester hours of physics, and
- 32 semester hours of chemistry, physics, biology, botany microbiology, molecular biology, or engineering (For computer science see other acceptable course work).

The 8 semester hours of chemistry or 8 semester hours of physics must be obtained in two sequential semesters, each semester including a lab. Only courses for science or engineering majors will be accepted. (For computer science see other acceptable course work).

a recognized technical field) to meet a basic chemistry with a lab or physics with a lab requirement to demonstrate their possession of training in basic science and technology."[24] Because the PTO does not limit the practice of registered patent practitioners to specific fields of technical competence, "it is reasonable to require demonstration of general scientific and technical training by adhering to the physics or chemistry with a lab provision."[25]

Under Category C, an applicant holding a bachelors degree in any subject but who does not qualify under Category A or B may rely on practical engineering or scientific experience in demonstrating sufficient technical training by taking and passing the Fundamentals of Engineering (hereinafter "FE") test.[26] The FE test is an eight-hour examination covering general engineering principles that "represents the minimum level of knowledge and technical expertise that those desiring to sit for the patent registration examination should possess."[27] The FE test is produced and graded by the National Council of Examiners for Engineering and Surveying.[28] It can be taken in each state and is administered by the State Board of Engineering Examiners.[29]

The technical requirements under Categories A, B, and C in the bulletin are not dispositive in determining whether an applicant has sufficient technical expertise to qualify for the examination.[30] If an applicant does not meet one of the credentials published in the bulletin, the PTO will conduct an independent review of the applicant's technical training and skill for compliance with the technical requirement set forth in 37 CFR §10.7(a)(2)(ii).[31] Whether a person possesses the technical qualifications necessary to qualify for the examination is at the discretion of the Commissioner based upon a review of all the evidence before the OED.[32] Illustratively, the Commissioner will consider the following factors relating to practical work experience in patent law: length of training with a patent attorney, nature of the supervision given by the patent attorney, the amount of supervision provided by the patent

24 See *"Tech01-Memorandum and Order from Decision on Petition for Review,"* under the heading "OED Technical," at 8, available at http://www.uspto.gov/web/offices/com/sol/foia/oed/tech/tech01.pdf.

25 Id.

26 *Supra* note 19, at 8.

27 *Supra* note 24, at 4.

28 *Id.*

29 It appears that many states require that a candidate for the FE test possess the qualifications laid out in Categories A and B of the PTO requirements, essentially nullifying the PTO's Category C as a viable separate option for qualifying for the Patent Bar Examination.

30 *Premysler v. Lehman*, 71 F.3d 387 (Fed. Cir. 1995), 33 U.S.P.Q. 2d 1859 (BNA) (D.C.C. 1994).

31 *Id.* at 390.

32 *Id.*

attorney, and whether a summary of the applicant's experience is corroborated by objective evidence.[33]

III. CHALLENGES TO THE PTO'S REQUIREMENTS TO SIT FOR THE PATENT BAR EXAMINATION

Since the establishment of the examination in the 1930's, there have been various challenges by bar examination applicants denied admission to the examination for failure to satisfy the technical requirements imposed by the Patent Office. These challenges have occurred at both the administrative level before the PTO, and also at the judicial level before the federal courts.[34] Applicants denied admission based upon insufficient technical training have been largely unsuccessful in both administrative and judicial appeals.

A. ADMINISTRATIVE APPEALS

An applicant who fails to satisfy the scientific and technical training requirements to sit for the examination may appeal the decision to the Commissioner of the PTO pursuant to 37 CFR § 10.2(c). Under 37 CFR § 10.2(c), the applicant submits a petition containing a statement of the facts involved, the action requested, and briefs or memoranda in support of the petition.[35] The Director of the OED will review the petition based on the record and will not consider any new evidence.[36] Upon review of the petition, the Director will either deny the petition upon a finding that the technical requirements are not satisfied or dismiss the petition as moot upon a finding that the technical requirements are satisfied by the applicant.[37]

The Director reviews each application for admission to the examination for compliance with the regulation. As long as the Director applies standards in assessing technical competency for the examination that are definite, fair and objective, his or her determination must be

33 *Supra* note 30, at 390.

34 An applicant denied admission must exhaust his administrative remedies before filing for judicial review. The federal courts may review determinations of the Commissioner under an abuse of discretion standard and will only overturn a Commissioner's decision if the record supports that the Commissioner acted in an arbitrary and capricious manner in rendering his or her decision.

35 37 C.F.R. § 10.2 (c) (1985).

36 *Id.*

37 Select OED memoranda and orders of petitions for review under 37 CFR § 10.2(c) regarding applicant challenges to technical requirements are published on the PTO web site under the OED. *See* "Technical," under the heading "Final Decisions of the Office of the Director (Enrollment and Discipline," available at http://www.uspto.gov/web/offices/com/sol/foia/oed/tech/tech.htm. The memoranda and orders are published with the name of the applicant deleted.

upheld.[38] To this end, the PTO issues the bulletin to illustrate to bar applicants the kinds of credentials that typically demonstrate the scientific and technical qualifications required for admission. Applicants without a technical degree have a "high burden to show sufficient expertise and professionalism in science or engineering" to qualify for the examination.[39]

B. JUDICIAL APPEALS

After exhaustion of administrative remedies, the applicant may resort to the courts for judicial review. Several judicial opinions shed light on the evolving standards and requirements for practice before the PTO.

In a 1963 U.S. District Court for the District of Columbia case, John Gager brought an action for a mandatory injunction to compel the Commissioner of Patents to allow him to sit for the next patent bar examination.[40] The Commissioner had denied Gager's application for the examination for several years because he lacked the basic training in scientific and technical matters to constitute the equivalent of a degree in engineering or physical science as required by the predecessor rule to 37 C.F.R. §10.7.[41] Gager argued that he had satisfied the technical requirements through a combination of two years of training at the U.S. Merchants Marine Academy and six years as an apprentice to a patent attorney.[42]

The then existing technical requirements to sit for the examination required that an applicant have a degree in engineering or physical science, or the equivalent thereof, from a college or school of recognized standing.[43] An applicant not meeting the basic technical requirement could still qualify for the examination if he or she had a bachelor's degree in another field and had completed 30 semester hours in chemistry or 28 semester hours in physics, or a combined total of 40 semester hours in chemistry, physics, and engineering.[44] Another option permitted fewer semester hours of technical course work, augmented by either extensive practical engineering, or scientific, experience, or a long apprenticeship under the tutelage of a patent attorney or agent.[45]

38 *Gager v. Ladd*, 212 F.Supp. 671, 673 (D.C.C. 1963).
39 *Supra* note 30, at 389.
40 *Supra* note 43.
41 *Id.* at 672. The predecessor rule was Rule 341(c).
42 *Id.* at 673.
43 *Id.*
44 *Id.*
45 *Id.*

Gager was granted credit for the equivalent of one year of technical college training based on his experience at the U.S. Merchants Marine Academy.[46] In contention, however, was his practical experience in patent and trademark work. The question addressed by the court was whether the Commissioner of Patents abused his discretion in concluding that Gager did not meet the requisite technical and scientific requirements under Rule 341(c).[47] The standard of review applied by the court was limited to whether the action of the Commissioner was arbitrary and capricious.[48]

The court analyzed the Commissioner's decision relative to the patent apprenticeship option. In particular, in order to satisfy the apprenticeship option then allowed by the PTO, the applicant must be primarily engaged in the preparation and prosecution of patent applications under the progressively decreasing supervision of a patent attorney.[49] Responsibility for mere patent searching was not sufficient. Gager had stated in his application that, during the course of his six-year apprenticeship, he had worked on the prosecution of five or more applications and had devoted the majority of his time to patent searching.[50] The court concluded that the Commissioner did not act in an arbitrary or capricious manner in concluding that the applicant's six years of patent experience did not satisfy the requirements under the apprenticeship option, and that the determination of the Commissioner was fair and reasonable under the circumstances.[51]

In *Premysler v. Lehman*, a 1995 Federal Circuit case, Philip Premysler challenged the decision of the Commissioner of Patents in denying his eligibility to sit for the patent bar examination because he had not satisfied the relevant technical requirements.[52]

Premysler applied to take the October 1990 examination, but he was denied admission by the OED because he did not have a bachelor's degree, a combination of scientific courses and practical experience, or a long apprenticeship in patent work.[53] He then took scientific courses and applied for the April 1993 examination, but was again denied admission for insufficiency of technical competence. Although

46 *Id.* at 672.
47 *Id.* at 673.
48 *Id.*
49 *Id.*
50 *Id.* at 674.
51 *Id.*
52 *Supra* note 30.
53 *Id.*

Premysler satisfied the technical criteria relative to the 1990 bulletin, he did not satisfy the more stringent criteria imposed by the bulletin for the April 1993 examination. The qualification options of a combination of scientific courses and practical experience, or a long patent apprenticeship, available under the 1990 criteria, were no longer acceptable under the 1993 bulletin.[54] The three technical qualification standards for the April 1993 examination were as follows:[55]

(1) a bachelor's degree in a scientific subject;

(2) a bachelor's degree in a nonscientific subject and 40 credit hours in scientific courses (including 24 credit hours of physics) or practical experience or both; or

(3) successful completion of the Engineer-in-Training (hereinafter "EIT") examination.[56]

Premysler first appealed the decision to the Director of the OED. The Director rejected the appeal on the grounds that he did not qualify under any of the three categories listed in the April 1993 bulletin. Premysler then appealed to the Commissioner of the PTO.[57] The Commissioner issued a decision critical of the Director's reasoning. The Commissioner stated that the technical requirements outlined in the bulletin are "merely an interpretation of the agency's regulations, not a definitive statement as to the prerequisites for the examination."[58] An applicant could qualify for the examination without having a bachelor's degree or successfully completing the EIT examination if the applicant made a showing that he or she had the level of technical expertise "substantially equivalent to a bachelor's degree in engineering."[59] Premysler was permitted to make another showing of his technical qualifications, which included scientific courses and practical patent experience consisting of the drafting of fifteen patent applications.[60] Premysler also provided the Commissioner with statements from an attorney and two colleagues attesting to his technical abilities. The Commissioner concluded that in spite of the

54 *Id.* Perhaps the PTO envisioned that the long apprenticeship option might supplement, but could never supplant, the need for formal technology education.

55 *Id.*

56 The EIT was the predecessor of the FE exam.

57 *Id.* at 1860.

58 *Id.*

59 *Id.*

60 *Id.*

evidence provided, Premysler did not have sufficient technical competence to qualify for the examination.[61]

Premysler appealed the Commissioner's decision to the U.S. District Court for the District of Columbia.[62] He alleged that the changes in the technical requirements to qualify for the patent bar as published in the bulletin between 1990 and 1993 required notice and comment rulemaking per 5 U.S.C. § 553 (b) of the APA.[63] The Commissioner responded that the technical requirements in the bulletin are agency policies rather than agency rules, and therefore under 5 U.S.C. § 553 (b)(3)(A), notice and comment are not required. The Commissioner rejected Premysler's application not because he did not satisfy the requirements in the April 1993 bulletin, but because he lacked the equivalent of a bachelor's degree in engineering.[64] The district court concluded that the technical requirement change in the bulletin from 1990 to 1993 was one of policy, as opposed to amendment of a rule, which the PTO has discretion over without notice and comment rulemaking.[65]

The plaintiff next argued that 37 C.F.R. §10.7 (a)(2)(i-iii) "is void for vagueness because it does not explain why a college degree is necessary to demonstrate that an applicant is otherwise competent."[66] The district court concluded that the regulation and the statute from which it is based (35 U.S.C. § 31) are not impermissibly vague. The court reasoned that no part of the regulation requires a college degree, but "simply requires a certain minimum level of qualifications and competence, which is usually satisfied by an engineering degree or the substantial equivalent."[67]

Premysler also brought constitutional claims alleging violations of equal protection and substantive due process. Because the regulations do not affect a suspect classification, a rational relationship test was applied with regard to equal protection.[68] In denying the equal protection challenge, the court concluded that requiring a bachelor's degree, an equivalent thereof, or successful completion of the EIT examination is rationally related to the PTO's interest in assuring that

61 *Id.*
62 *Premysler v. Lehman*, 33 U.S.P.Q. 2d 1859 (D.C.C. 1994).
63 *Id.* at 1861.
64 *Id.*
65 *Id.*
66 *Id.* at 1862.
67 *Id.*
68 *Id.*

patent practitioners have the necessary skills to prepare and prosecute patent applications.[69]

With regard to substantive due process claims, Premysler argued that he has both a property and a liberty interest that were deprived by requiring him to attend college to sit for the bar examination.[70] The court concluded that an applicant for the examination has no property interest because there is only a unilateral expectation in favor of becoming a patent practitioner and no legitimate claim of entitlement to that career.[71] The court also concluded that there is no requirement of a college degree to sit for the examination, and therefore no liberty interest had been violated.[72] Because Premysler has no property interest in becoming a patent agent, and no liberty interest had been violated, the court held that there was no violation of substantive due process by denying his application for the examination.

An "arbitrary and capricious" standard of review was applied by the court in reviewing the Commissioner's decision in denying Premysler's application for the bar because he did not demonstrate that he had the equivalent of an engineering degree.[73] The arbitrary and capricious standard gives a great deal of deference to the PTO and does not allow the court to substitute its judgment for that of the agency. The court upheld the Commissioner's decision and dismissed all claims on a motion for summary judgment.[74]

Premysler appealed the dismissal to the Federal Circuit,[75] arguing that the Commissioner abused his discretion in finding Premysler's technical qualifications inadequate to sit for the patent bar examination.[76] The court affirmed that the technical requirements to qualify for the examination as published in the bulletin are merely interpretive of the required technical competence called for in 37 C.F.R. § 10.7(a)(2)(ii) and 35 U.S.C § 31.[77] As such, notice and comment rulemaking is not required in updating the technical criteria in the bulletin.

The Court confirmed that the Commissioner has the discretion to determine whether an applicant has sufficient technical skills to take the

69 *Id.*
70 *Id.* at 1863.
71 *Id.*
72 *Id.*
73 *Id.*
74 *Id* at 1864.
75 *Premysler v. Lehman*, 71 F.3d 387 (Fed. Cir. 1995).
76 *Id.* at 389.
77 *Id.* at 390.

examination if the criteria called for in the bulletin are not satisfied.[78] The evidence of the apprenticeship provided to the Commissioner by Premysler was deemed inadequate to support a finding of apprenticeship because it did not provide the length of the apprenticeship, the amount of oversight and training provided by the patent attorney, or any corroborated objective evidence of patent applications drafted.[79] In reviewing the record pertaining to the showing of apprenticeship, the Federal Circuit found no reversible error in the Commissioner's determination that Premysler's technical qualifications were insufficient, and affirmed the district court's decision to dismiss the case.[80]

In another 1995 Federal Circuit case on appeal from the U.S. District Court for the District of Columbia, Joseph Maresca challenged the decision of the Commissioner of Patents in denying his application to sit for the patent bar examination because his bachelor's degree in business administration did not meet the criteria set forth in the bulletin.[81] In a brief opinion by a three-judge panel, the Federal Circuit affirmed the decision of the district court granting summary judgment for the Commissioner because the Commissioner's decision was deemed fair and reasonable and not arbitrary and capricious.[82]

The reasoning supporting the decision is better discernible from the district court opinion, which reviewed the three ways that an applicant could demonstrate that he or she possesses the scientific and technical qualifications to sit for the patent bar.[83] Maresca attempted to satisfy the

78 *Id.*
79 *Id.*
80 *Id.*
81 *Maresca v. Commissioner of Patents and Trademarks*, 56 F.3d 80 (Fed.Cir. 1995).
82 *Id.* at 82.
83 *Maresca v. Commissioner of Patents and Trademarks* 871 F. Supp. 504, 505 (D.D.C. 1994).

Category A - an applicant must possess a bachelor's degree, or an equivalent degree, in one of 29 listed technical disciplines.

Category B - an applicant must possess a bachelor's degree in a non-technical discipline and demonstrate that he or she has satisfied one of the 4 options

(1) 24 semester hours in physics courses for physics majors,

(2) 24 semester hours in biological sciences courses for biological sciences majors and either eight semester hours of chemistry with a lab or eight semester hours of physics with a lab for chemistry, physics or biological science majors,

(3) 30 semester hours in chemistry courses for chemistry majors, or

(4) 40 semester hours of chemistry, physics, the biological sciences, or engineering, including at least eight semester hours of chemistry with a lab or eight semester hours of physics with a lab. Under this option, science courses for non-science majors, astronomy courses and mathematics courses are not accepted, however up to 16 semester hours may be credited based upon a showing of scientific and technical training gained through a long apprenticeship with a registered patent attorney or agent.

Category C - an applicant must demonstrate that he or she has taken and passed the Engineer-in-Training test.

requisite technical qualifications under both Category A and under option 4 of Category B of the bulletin. With regard to the Category A criteria, he argued that he had the equivalent of an industrial engineering degree. The OED opined that a bachelor of science in business administration was not the equivalent of an industrial engineering degree.[84] With regard to option 4 of Category B, Maresca argued that he had completed the required 40 semester hours of chemistry, physics, biological sciences, or engineering courses because he should receive credit for such courses as Topics in Science, Concepts of the Computer, General Psychology, Quantitative Analysis, Operations Research, Business Policy, Price Analysis, Econometrics, Ordinary Differential Equations, Linear Algebra, Introduction to Systems Analysis and Design, Advanced Systems Analysis, Policy Studies Thesis, and Social Consequences of Information Theory. Maresca also attempted to receive credit for a long apprenticeship under the guidance of a patent attorney or agent. The OED denied the suitability of these computer, mathematics, economics, and psychology courses under option 4 of Category B, and also determined that he had not taken the required 8 semester hours of chemistry or physics. The PTO also denied Maresca's request for apprenticeship credit because he did not provide information on specific patent applications drafted nor did he provide a statement from a patent attorney or agent attesting to the apprenticeship.[85]

After exhausting his administrative remedies within the PTO, Maresca filed a civil action pursuant to 35 U.S.C. § 32 challenging the Commissioner's decision.[86], advancing the same arguments rejected by the PTO. He also asserted that the Commissioner had not obtained an independent validation from outside professional associations of the technical qualification requirements for the examination, and as such, the determination that the courses he had taken did not meet the qualification requirements was invalid.[87] Secondly, he argued that the PTO's determination of technical qualifications for the examination is an "invalid encroachment on states' rights because it impinges on New York's law that set educational standards."[88] The district court dismissed both these arguments by reinforcing that Congress vested the Commissioner with the discretion to determine the necessary

84 *Id.* at 505-6.
85 *Id.* at 506.
86 *Id.* at 507.
87 *Id.*
88 *Id.*

qualifications to sit for the examination and additional approval from a state or independent organization is not required.[89] The court concluded that the Commissioner did not abuse his discretion in denying Maresca's application and upheld the decision because it was fair and reasonable in light of the facts and circumstances.[90]

IV. Requirements for Admission to Patent Practice in Foreign Countries

Many national and regional patent offices require registration of patent practitioners and administer the equivalent of a patent bar examination. Further, many require experience in the form of a patent internship or apprenticeship as a prelude for sitting for the exam. Illustrative examples are presented below.

A. European Patent Office

The European Patent Office ("EPO") requires patent practitioners to pass a qualifying examination to be included as a member of the Institute of Professional Representatives before the EPO.[91] In addition, the representative must be a national of one of and have a place of business or employment in one of twenty contracting states.[92] Candidates are admitted to the qualifying examination if they have a combination of the required technical qualifications and the required professional patent experience.[93]

Candidates must have a scientific or technical degree in for example biology, pharmacology, chemistry, electronics, engineering, pharmacology or physics. Each contracting state has two lists (A and B) of qualified educational institutions and degrees.[94] List A includes the educational institutions and diplomas recognized for the first level of qualification. For example, a master's degree, a bachelor's degree with honors, or other similar degree from a university, technical university, technical high school or comparable establishment would qualify.[95] List B includes educational institutions and diplomas recognized for the

89 *Id.*
90 *Id.*
91 *See* "How does one become a professional representative?," under the heading "How to become a European Patent Attorney," available at http://www.european-patent-office.org/epo/pubs/pat_attorney/e/3_e.htm.
92 *Id.*
93 *Supra* note 98.
94 *Id.*
95 *Id.*

second level of qualification. For example, a degree, certificate or diploma corresponding to a bachelor's degree with honors, or a diploma or degree from a vocational college, higher technical college or institute, school of engineering or comparable establishment would qualify.[96]

The professional patent experience must be either under the supervision of a patent practitioner in a law firm or as an employee or assistant of an employee dealing with patent matters in industry.[97] For candidates qualifying under list A technical qualifications, the practical patent experience must be for a period of three years. For candidates qualifying under list B technical qualifications, the practical patent experience must be for a period of six years.

B. JAPAN

In Japan, a person desiring to become a patent attorney must pass a preliminary examination before qualifying for the main examination.[98] The preliminary examination is intended to test whether the applicant possesses the sufficient academic knowledge.[99] Applicants who have completed the general education portion of a bachelor's degree may apply for an exemption. The main examination tests domestic laws related to patents and trademarks through a combination of written and oral examination.[100]

C. CANADA

The Canadian Intellectual Property Office (hereinafter "CIPO") recommends that patent agents and patent attorneys should have at least an undergraduate university degree in science or engineering in order to "greatly facilitate communication with inventors and enhance the [practitioner's] ability to understand and describe even the most technically challenging inventions."[101] To be eligible to sit for the agent qualifying examination, a person must reside in Canada and have worked in Canadian patent law and practice for at least twelve months, or been employed for at least twelve months on the examining staff of the CIPO.[102]

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96 *Id.*

97 *Id.*

98 *See* "Patent Attorney Examination," under the heading "What is a Patent Attorney?" available online at http://www.jpaa.or.jp/english/what_pa/holders.html.

99 *Id.*

100 *Id.*

101 *See* "What is a patent agent?," under the heading "What are Patent and Trade-mark Agents?" available at http:www.ipic.ca/english/general/agents.cfm.

102 Canadian patent rule 12.(1), available at http://www.canlii.org/ca/regu/sor96-423/sec12.html.

Although the CIPO does not specifically delineate acceptable technical degrees that qualify to sit for Canada's agent examination, patent examiners must have graduated from a recognized university with either a degree in mechanical, chemical, electrical or computer engineering, an honors degree in physics or chemistry or a master's degree or higher in biochemistry or molecular biology.[103] Examination is conducted once per year, usually in October. On-the-job training in patent practice is also a critical component to being able to sit for the examination, which is preferably supplemented with the study of Canadian patent law.

D. AUSTRALIA

A person desiring to practice as a patent attorney in Australia should have a degree, advanced diploma or graduate diploma in a field of technology that "contains patentable subject matter", and is awarded by a body that is authorized to award such a degree, diploma, advanced diploma or graduate degree.[104] Alternatively, a person desiring to become a patent attorney may pass an examination in a branch of engineering or science that qualifies under an approved professional institution.[105]

There is also an internship requirement whereby a candidate must work as a technical assistant for a registered patent attorney, or be employed by a company in a patent law capacity, or be an examiner of patents within the Australian Patent Office, for at least one year.[106] A candidate who is a resident of Australia and meets the technical and internship requirements must then pass an examination in nine subject groups relating to patent and trademark law.[107] For each such subject group, a candidate must satisfy the requirements of an accredited course of legal study prior to sitting for the examination.[108]

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103 *See* "Summary of Selection Criteria," under the heading " Patent Examination Recruitment " available at http://straegis.ic.gc.ca/sc_mrksv/cipo/patents/pt_employopps_p3-e.html.

104 Regulation 20.3 of the Australian Patent Regulations. *See also* "Academic Requirements - Patent Attorney," available at http://psb.gov.au/get/pa/qualif/academics/req.htm. The Australian Qualification Framework is a nationally recognized reference, which categorizes qualifications into twelve levels from institutions categorized into three sectors (schools, vocational and higher education).

105 *Id.* The Institution of Engineers, Australia, and The Royal Australian Chemical Institute are two of the approved institutions under Regulation 20.3.

106 Part 2 of Chapter 20 of the Patents Regulations. See "Patent Regulations - Patent Attorney," available at http://psb.gov.au/get/pa/legis/regulat.htm.

107 *See* "Qualifications for Registration," under the heading "Meeting Requirements - Patent Attorney," available on online at http://psb.gov.au/get/pa/qualif/tech/meetreq.htm.

108 *Id.*

E. SINGAPORE

To become a registered patent agent in Singapore, one must be a resident and hold a university degree or an equivalent qualification approved by the Registrar.[109] The Intellectual Property Office of Singapore (hereinafter "IPOS") does not specify if the university degree must be in a technical area; however, discretion is given to the Registrar to recognize a particular degree as acceptable or not.[110] The IPOS lists, as a guide, universities both in Singapore and abroad that are recognized by the Registrar.[111] In addition to a university degree, the applicant must have received a graduate certificate in intellectual property law, and have completed a one-year internship prior to sitting for the patent agent qualifying examination.[112] The internship must be completed in patent law related work under the supervision of a registered patent agent or patent attorney.

V. EVOLUTION OF PATENTABLE SUBJECT MATTER AS A MOTIVATOR FOR RECONSIDERING THE PATENT BAR ADMISSION REQUIREMENTS IN THE U.S.

A patent may be granted to "whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."[113] The four statutory classes of patentable subject matter can be categorized into either processes or products and any new and useful improvement of processes or products.

Congress envisioned an expansive view of the statutory subject matter covered under 35 U.S.C. § 101 of the 1952 Patent Act, stating in its Committee Reports that the subject matter was intended to "include anything under the sun that is made by man."[114] Over the past forty years, there has been an expansionary evolution in the breadth of patentable subject mater. This evolution is at least partly attributable to

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109 *See* "Registration Requirements and Process," under the heading "Requirements for Becoming a Registered Patent Agent," available at http://www.ipos.gov.sg/newdesign/sitebranches/ourprogramme.../patentagent_requirements.htm.

110 *See* "Registration Details," under the heading "Frequently Asked Questions," available at http://www.ipos.gov.sg/newdesign/sitebranches/ourprogramme/ippro.../patentagent_FAQs.htm.

111 *See* "University Degrees or Equivalent Qualification Approved by Registrar," under the heading "Requirements for Becoming a Registered Patent Agent," available at http://www.ipos.gov.sg/newdesign/sitebranches/ourprogramme.../patentagent_requirements.htm.

112 *See* "Graduate Certificate in Intellectual Property Law and Internship," under the heading "Requirements for Becoming a Registered Patent Agent," available at http://www.ipos.gov.sg/newdesign/sitebranches/ourprogramme.../patentagent_requirements.htm.

113 35 U.S.C. § 101 (1952).

114 H.R. Rep.No.1923, 82 Cong., 2d Sess., 6 (1952).

pioneering breakthroughs in computer sciences and the biological sciences. Innovation in computer technology has further led to the advent of patent grants for business method patents. A review of this broadening of patentable subject matter over the past few decades provides a useful backdrop for a fresh approach to evaluating the technical and scientific skill sets, and other preparation needed to afford competent preparation and prosecution of in these, and other, diverse technologies.

A. COMPUTER-RELATED PATENTS

With the development of the digital computer, which functions by manipulating mathematical expressions, there has been a host of litigation interpreting whether certain computer programs constitute patentable subject matter. In 1972, the Supreme Court in *Gottschalk v. Benson* examined a method for converting binary-coded decimal numerals into pure binary numerals for use in general purpose digital computers and held that the process claimed was "so abstract and sweeping as to cover both known and unknown uses of the binary coded decimal to pure binary conversion," and was therefore an attempt to patent an idea itself, rather than a process utilizing the idea. [115] The Court reasoned that if the formula were patented, the result would be tantamount to a monopoly on the scientific truth itself, thereby removing an algorithm in the form of the formula from the public domain. The Court did point out, however, that not all computer programs were nonpatentable subject matter, leaving open a window for potential claims.[116]

Six years later, the Supreme Court in *Parker v. Flook*, addressed whether a method for updating alarm limits in the catalytic conversion of hydrocarbons using a mathematical algorithm programmed into a digital computer constituted patentable subject matter.[117] The Court held that the patent application claim was unpatentable because all it provided was a formula for updating an alarm limit which is simply a number. If a patent issued on the formula, it would represent a patent on a law of nature.[118] The Court reasoned that novelty independent of a law of nature must be demonstrated. The Court pointed out that a method that

115 *Gottschalk v. Benson*, 409 U.S. 63, 64 (1972).

116 *See generally* Dale L. Carlson, *The International Protection of Computer Programs*, 3 Syr. J. Int'l & Com. 205, 219 (1975).

117 *Parker v. Flook*, 437 U.S. 584, 585 (1978).

118 *Id.* at 594.

utilizes a scientific principle is potentially patentable if the process itself, and not merely the mathematical algorithm, is new and useful.[119]

The trend of litigating computer program patent applications continued three years later when, in *Diamond v. Diehr*, the Supreme Court queried whether a process for curing synthetic rubber, which utilized mathematical formulae programmed into a digital computer as steps in the process, constituted patentable subject matter.[120] The Court reiterated that computer programs are unpatentable if they consist only of mathematical algorithms, however the mere presence of a computer program in an otherwise patentable process does not render the overall invention unpatentable. The Court upheld the patent claims for curing synthetic rubber as patentable subject matter because they constituted a specific application of a mathematical algorithm in a process, which "when considered as a whole, is performing a process which the patent laws were designed to protect."[121] The requirements of 35 U.S.C. § 101 were met because the process transformed an article into a different state by curing synthetic rubber. The Supreme Court in *Diehr* clarified that certain software related inventions do indeed comprise patentable subject matter.

In Re Alappat, illustrative of more recent Federal Circuit jurisprudence, involved the question of the patentability of computer related claims in the context of a means for creating a smooth waveform display in a digital oscilloscope.[122] More specifically, the claim in question was to a rasterizer which creates a smooth waveform by combining circuit elements to form a machine for converting discrete waveform data samples into pixel illumination intensity data for display. The court held that the rasterizer met all the requirements for patentable subject matter in that it was not a disembodied mathematical concept, but "rather a specific machine for producing a useful, concrete, and tangible result."[123]

In summary, the current law pertaining to the patentability of computer programs permits the grant of a claim for a known general purpose computer programmed with a new mathematical algorithm because the new programming transforms the general-purpose computer into a special purpose computer that performs specific useful functions.

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119 *Id.*
120 *Diamond v. Diehr*, 450 U.S. 175 (1981).
121 *Id.*
122 *In Re Alappat*, 33. F.3d 1526, 1537 (Fed.Cir. 1994).
123 *Id.* at 1544.

B. BUSINESS METHOD PATENTS

Until the advent of the computer and patenting of computer programs, a business method was unpatentable. The landmark 1998 Federal Circuit decision in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* abrogated this rule.[124] The Federal Circuit considered on appeal the finding of the federal district court that Signature Financial's patent was invalid on the ground that it did not encompass statutory subject matter.[125] The patent was to a data processing system for implementing an investment structure used in administering a particular type of mutual fund.[126] The data processing system was programmed with a mathematical algorithm for transforming data representing discrete dollar amounts through a series of mathematical calculations to yield a final share price. The system allows several mutual funds to pool their investment funds into a single portfolio to consolidate the costs of administering the fund.

The court addressed two judicially-created, but arguably ill-conceived, exceptions to patentable subject matter, namely the mathematical algorithm exception and the business method exception.[127] The court held that the "transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation because it produces a useful, concrete and tangible result - a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades."[128] In other words, the practical application of an algorithm provides a foundation for patentability. The court explained that "certain types of mathematical subject matter, standing alone, represent nothing more than abstract ideas until reduced to some type of practical application."[129] The court rejected arguments that business methods are unpatentable, and concluded that the "business method exception", long perceived as a stumbling block, did not in fact exist. The court reversed the lower court, stating that the key to patentability is whether the business method produces a "useful, concrete, and tangible result" by transforming data in a useful way.[130]

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124 *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed.Cir. 1998).
125 *Id.* at 1370.
126 *Id.*
127 *Id.* at 1375.
128 *Id.* at 1373.
129 *Id.*
130 *Id.*

One year later, in *AT&T Corp. v. Excel Communications, Inc.*, the Federal Circuit heard another appeal pertaining to a business method patent that a federal district court had declared invalid under 35 U.S.C. §101 for failing to claim statutory subject matter.[131] The process claims in the AT&T patent were for a method of assisting long distance providers in furnishing differential billing treatment to subscribers by utilizing certain subscriber and call recipient data to which Boolean algebra was applied to determine their value.[132] The resulting value was applied to create a signal useful for billing purposes. The business method patent implicitly incorporated mathematical algorithms in process claims, rather than machine or apparatus claims as in *State Street*. The court held that the same essential standard should apply, regardless of whether the claims are made to a process or to a machine. Thus, a method of applying a mathematical algorithm constitutes patentable subject matter if it produces a useful, concrete, tangible result without preempting other uses of the mathematical principle.[133] The decision also reaffirmed the holding in *State Street* that business methods constitute statutory patentable subject matter.

C. Genetically Engineered Life Forms, Biology, and Biotechnology Patents

In 1948, the Supreme Court first considered whether artificially-enhanced, naturally-occurring materials constitute patentable subject matter in *Funk Brothers Seed Co. v. Kalo Inoculant Co.*[134] The invention in question was for a mixed culture of nitrogen fixing bacteria that was used to inoculate plant seeds. The Court held that the invention was nonpatentable because the combination consisted of six species of naturally occurring bacteria, which produced no new bacteria, no change in the six species of bacteria used, and no increased utility.[135] The combination of bacteria performed in the same manner as in their natural form. The Court reasoned that each bacterium is a "manifestation of the laws of nature, free to all men and reserved exclusively to none."[136]

Ten years later in *Merck & Co. v. Olin Mathieson Chemical Corp.*, the Fourth Circuit Court of Appeals upheld the validity of a patent for Vitamin B_{12} over a challenge that it was a naturally occurring

131 *AT&T Corp. v. Excel Comm., Inc.*, 172 F.3d 1352 (1999).
132 *Id.* at 1353.
133 *Id.* at 1361.
134 *Funk Brothers Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948).
135 *Id.* at 131.
136 *Id.* at 130.

material.[137] The court reasoned that the patent was to a purified version of the vitamin that involved human ingenuity in devising the processes of extraction, concentration, and purification of the vitamin to yield an improved version.[138]

In 1980, the Supreme Court in *Diamond v. Chakrabarty* investigated whether man-made genetically engineered bacterium useful for breaking down crude oil constitutes patentable subject matter.[139] The PTO rejected the claims for the bacteria as non-patentable subject matter because micro-organisms are "products of nature."[140] The question on appeal was whether the man-made microorganisms constitute a manufacture or a composition of matter within 35 U.S.C. § 101. The Court rejected the argument that §101 does not include living things as there is nothing in the statute or its legislative history that suggests that Congress intended to preclude the patenting of living things.[141] The Court also pointed out that the more relevant distinction for patentability is not between living and non-living things, but between products of nature, which are not patentable, and products of human ingenuity and inventiveness which are patentable.[142] The Court also rejected the argument that micro-organisms cannot qualify as patentable subject matter until expressly authorized by Congress because Congress used broad language in drafting §101 to account for breakthrough and frontier types of inventions that are often unforeseeable.[143] The Court held that the genetically engineered life forms and bacterium had characteristics that were not found in nature, and hence could be the subject of a utility patent.[144] The Court distinguished this decision from its decision in *Funk Brothers Seed* on the basis that the *Diamond* bacterium was novel with different characteristics, whereas the *Funk* bacterium was not new, but simply a mixture of naturally existing bacteria which functioned in the traditional known way.[145]

Thus, non-human living things that are artificially produced or enhanced are potentially patentable.

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137 *Merck & Co. v. Olin Mathieson Chem. Corp.*, 253 F.2d 156, 164 (4th Cir.1958).
138 *Id.* at 163.
139 *Diamond v. Chakrabarty*, 447 U.S. 303, 305(1980).
140 *Id.* at 306.
141 *Id.* at 313.
142 *Id.*
143 *Id.* at 308.
144 *Id.* at 310.
145 *Id.*

D. MEDICAL PROCEDURE PATENTS

As a matter of public policy, many countries do not grant patents for medical and surgical procedures, and medicines. The Patent Act does not contain such a prohibition to granting U.S. patents in these technology areas; however, as far back as 1862, the judiciary recognized the public policy concern in the seminal case of *Morton v. NY Eye Infirmary* where the court invalidated a patent on the use of ether for surgical anesthesia.[146] The patented invention was a medical breakthrough, and the suspected underlying reason the court invalidated the patent was that life-saving medical procedures should not be privately owned, but should be readily available to society.[147] To more effectively deal with the public policy concerns of limiting access to and increasing the prices of potentially life saving medical and surgical procedures by granting patent monopolies, Congress in 1996 amended 35 U.S.C. § 287 to preclude the owner of a patent directed to a "medical procedure" from enjoining or obtaining damages from an infringer of that patent.

In short, although medical procedures currently constitute patentable subject matter, an infringer cannot be enjoined or held liable for damages. On the other hand, medicines are patentable subject matter, and do not fall under the damages exception recited in 35 U.S.C. § 287(c).

VI. IMPACT OF NEW PATENTABLE SUBJECT MATTER ON PATENT PRACTICE

Over the last forty years, subject matter suitable for patentability has continued to expand and technological advances in computer and software technology, biology, medicine and medical procedures have expanded the realm of patentable subject matter. The United States Patent Classification System divides the entire collection of U.S. patents into searchable groupings based on the technology claimed in the patents. To keep pace with the broadening of patentable subject matter, the PTO continues to increase the number of patent classes and subclasses within the USPC.[148] For example, in September 2002, there were 462 patent classes and 156,604 subclasses for plant, utility and design patents. Just 15 months later, in February 2004, there were 4 more patent classes and 2,079 more patent subclasses.

146 *Morton v. New York Eye Infirmary*, 17 F. Cas. 879 (C.C.S.D.N.Y.1862).

147 *Id.* at 884.

148 *See* "Overview of the Classification System," under the heading "Office of Patent Classification," available at http://www.uspto.gov/web/offices/opc/documents/overview_dec02.pdf.

The evolution of new patentable subject matter, and the development of more complex technologies constituting patentable subject matter, have necessitated an expansion in the technical and scientific skills of patent attorneys and agents. Today, patent attorneys are called upon to serve a broader, and more diverse, client and technology base than ever before. Accordingly, the PTO should consider expanding the breadth of the technical and scientific skills that qualify an applicant to sit for the patent bar examination.

The technical requirements to sit for the patent bar "necessarily evolve because of changes in technology and the law."[149] The bulletin is updated at least annually and reflects any changes in technical requirements. In 1963, bachelor's degrees in biology and computer science did not qualify for the examination under Category A. Technical subjects under Category A have been added over time. For example, after the Supreme Court's decision in *Chakrabarty*, a biology degree was recognized by the PTO.[150] There were 28 listed technical degrees in the 1989 bulletin, 29 in the 1991 bulletin, 30 in the 1996 bulletin, 31 in 1998 bulletin, and 32 in the 2003 bulletin. With the explosion in patent activity in computer and biological technologies, the PTO responded by adding bachelor's degrees in computer science, computer engineering, biology, biochemistry, microbiology, and molecular biology to group A.

Under the current system, a registered patent attorney or agent may practice in any field of technology in which a client will trust the practitioner, and that the practitioner is competent in handling. If a registered patent practitioner is not knowledgeable in a certain legal matter, the practitioner must associate with another practitioner who is competent.[151] Under the PTO's proposed new competence rule (37 C.F.R. § 11.101), "a practitioner shall provide competent representation to a client having immediate or prospective business before the Office."[152] The proposed rule gives an example of a conduct violation where a practitioner is handling a legal matter in which he or she is not competent to handle due to insufficient legal or scientific training, and the practitioner does not associate with another practitioner who is competent in the matter.[153] Clearly, under the current and proposed systems, the PTO allows for a patent practitioner to handle a technical

149 *See* "Tech02-Memorandum and Order from Decision on Petition for Review," under the heading "OED Technical," at 5-6, available at http://www.uspto.gov/web/offices/com/sol/foia/oed/tech/tech01.pdf.
150 Burke & Field, Jr., *supra* note 3, at 150.
151 37 C.F.R. § 10.77 (1985).
152 68 Fed. Reg. 69442, 69548 (Dec. 12, 2003).
153 *Id.*

matter in which he or she is not competent with the caveat that the practitioner engages the assistance of another practitioner who is technically competent in the matter. These competence rules are important to keep in mind when evaluating alternative options for patent bar qualification whereby a narrower technical skill set for applicants would be permitted. One can argue that a patent practitioner with a narrower technology skill set would be technically competent to practice, so long as the practitioner associates with another practitioner who is technically competent in the matter. It goes without saying that practitioner with a narrower technical skill set would find himself or herself seeking the assistance of other practitioners to a greater degree in comparison to a practitioner with a broader technical skill set.

VII. The Authors' Proposal

The authors propose that the PTO implement a modified version of the internship requirement that is in place in several foreign patent offices, including Australia, Canada, Europe, and Singapore. Under this protocol, an applicant must complete a one-year internship working as an assistant for a patent attorney or agent, or be an examiner in the PTO, for at least one year prior to sitting for the patent bar examination. In addition to the internship, an individual desiring to become a patent practitioner must have at least a bachelor's degree from an accredited institution that is in a field of technology that "contains patentable subject matter."

Since this proposal recognizes that "anything under the sun made by man" [154] is potentially patentable, acceptable bachelor's degrees would significantly increase from the current 32 technical degrees under Category A. For example, a limited number of universities in the United States offer bachelor's degrees in packaging engineering, which does not fall under the PTO's current Category A. However, packages and containers for goods constitutes patentable subject matter under patent class D9. Accordingly, under the authors' proposed "patentable subject matter" criterion, a degree in packaging engineering would satisfy the technical qualifications for registration.

Although the broadened fields of technology that would qualify for the patent bar under the PTO's Category A would thus be less restrictive than currently imposed, the internship requirement would impose a new obligation on applicants for the patent bar. This new obligation will help

154 H.R. Rep.No.1923, 82 Cong., 2d Sess., 6 (1952).

insure that each applicant for registration has hands-on practical experience prior to sitting for the patent bar examination. An affidavit or declaration by the supervising registered patent practitioner certifying that the intern had successfully completed the internship assisting in substantive, enumerated patent matters would be required to accompany the application.

Under the proposed system, to become a registered patent attorney, an individual would have to satisfy five requirements in the following order:

1) Earn a bachelor's degree in a field of technology that pertains to patentable subject matter,
2) Earn a JD degree from an ABA accredited law school,
3) Pass a state bar examination,
4) Work as a patent intern handling substantive patent matters for one year either in a law firm or a corporate setting, or as an Examiner for the PTO, and
5) Pass the patent bar examination.

To become a registered patent agent, an individual would complete all of the previous steps with the exception of steps 2 and 3.

There are certain advantages to this proposal over the current system. The criteria for a degree in a field of technology that contains patentable subject matter allows for a desired link between the technical skill set of the applicant and the base of patentable subject matter, since the required technical skills would presumably have a foundation, and thus be utilized, in actual practice.

The internship requirement would better prepare patent bar applicants for practice by augmenting formal study with real world application of patent law concepts. By working under the tutelage of a registered patent practitioner, or Patent Examiner, for a year, the intern would gain invaluable hands-on experience in patent preparation and prosecution fundamentals.

Law firms and corporate patent departments may welcome such an internship program, particularly since interns would presumably be paid less than typical first year corporate hires or associates. Moreover, a first year associate with the experience gained during a patent internship would be better skilled to make significant contributions at the outset of a career as patent attorney or agent. Although summer internships currently provide a limited means for law school students to obtain some patent experience, this option is not available to prospective patent agents, and is not viable for the many part-time evening law students who have full-time, non-legal employment commitments.

Although this proposal would presumably open up the profession to a larger pool of practitioner applicants, and thereby risk resulting in an over-supply of patent practitioners, this risk is minimal. The reason is that the one year internship obligation requires a significant commitment to the profession, and helps ensure that those entering it are better-trained in the "nuts and bolts" of patent practice than would otherwise be possible.

VIII. Conclusion

The authors believe that the "bag of tools" afforded patent bar applicants should be expanded in two directions. First, more breadth should be added to the bag to accommodate all technology backgrounds that pertain to patentable subject matter". Second, more depth should be added to the bag by imposing an internship requirement as a pre-condition to sitting for the patent bar. The public, members of the patent bar, and patent bar applicants themselves, all stand to gain from the adoption of a requirement for this expanded bag of tools.