

H.R. 2391: PROTECTING UNIVERSITIES IN COLLABORATIVE RESEARCH

I. INTRODUCTION

The following two hypotheticals illustrate the problems posed in this Note:

A research team in a biotechnology field is composed of professor, P, at a federally funded university, and five members of a company, collectively called M. The company researchers approached P regarding some fundamental research in which P was involved. P voluntarily shared his research and some thoughts with M. M considered the research and then developed invention I, using this help from P. Invention I was not conceived at the time of the information transfer between P and M. Invention I was patented with M named as the inventors. Because M and P were not members of the same company nor did they assign rights to a common entity, the prior communications between P and M are used to render I obvious, and thus ineligible for patent protection.¹

Suppose inventors A and B in a university discover and patent enzyme, E. The university then collaborates with inventor C in a company to develop E for a downstream product, E'. E' is then patented, with A, B, and C as the inventors. Any conversations of A and B with C before the invention of E' will be prior art to render E' obvious because the two inventive entities are not identical and thus the group A, B, and C "derived" the invention from the group A and B. However, if a third party, T, develops E' without any conversations with A and B, no prior art exists to render E' obvious. Thus, a third party can patent an improvement or a development of an invention, but the original inventor cannot.²

These two hypotheticals illustrate the problems with the current state of patent law. Communications of less than the complete invention can be relied upon to reject or invalidate a patent claim.³ This can occur even if information was confidential, undocumented, or shared among consenting parties.⁴

Universities, while primarily serving the public good through research, teaching, and dissemination of knowledge, also perform research with

1. For a discussion on the obviousness determination, see *infra* Part II.C.

2. For a similar example, see Eric K. Steffe et al., *Biotech Collaborations and Maximizing Patent Protection: Two Hypotheticals*, 27 AIPLA Q.J. 149, 160 (1999).

3. See *infra* note 96 and accompanying text.

4. See *infra* note 125.

private companies and the government.⁵ University research is a fundamental step in the development process, and it makes the United States a leader in scientific progress and innovation.⁶ Assignment of the rights to the patent is not always an available option to a federally funded university early in the research.⁷ Thus, legislation is needed to help universities contribute to strong patents and encourage collaborative efforts.

This Note explains the history of the Patent Act and the importance of patents in society.⁸ The Note then describes the requirements of a patentable invention, focusing on the nonobviousness requirement of 35 U.S.C. § 103.⁹ Next, the Note analyzes case law that interprets prior art for section 103 and leads to the recent decision by the Federal Circuit in *OddzOn Products, Inc. v. Just Toys, Inc.*¹⁰ The Note then examines the effect of the *OddzOn* holding on universities as well as the tension between the holding and the legislative intent behind the Patent Act.¹¹ After establishing the importance of university research, this Note discusses a proposed bill to determine whether its elements are necessary to protect universities.¹²

II. HISTORY

A. Background

In the age of new and quickly developing technology and biotechnology, individual research is becoming inefficient and time consuming.¹³ Instead, collaborations between inventors, companies, and

5. See *infra* note 108.

6. See *infra* Part II.G. The legal system, however, has not yet adapted to the needs of this important scientific player. The Bayh-Dole Act encourages public funding of universities, and, while a very significant step towards helping universities, can result in restraints on universities that are governmentally funded with respect to transferring rights. See *infra* note 114.

7. See *infra* note 129 and accompanying text.

8. See *infra* Part II.A–B.

9. See *infra* Part II.C.

10. See *infra* Part II.D; *OddzOn Prod., Inc. v. Just Toys, Inc.*, 122 F.3d 1396 (Fed. Cir. 1997).

11. See *infra* Part II.E.

12. See *infra* Part II.F and Part III.

13. See Rochelle Cooper Dreyfuss, *Collaborative Research: Conflicts on Authorship, Ownership, and Accountability*, 53 VAND. L. REV. 1161, 1162 (2000).

The reasons for this evolution are manifold. In large part, it is a consequence of intellectual limitations. In many fields—biotechnology is one example—the intensity of specialization makes it nearly impossible for any one researcher to know enough to work alone; interdisciplinary investigation is essential if the frontiers of knowledge are to be pushed forward. The globalization of the marketplace has also had an influence Most obviously,

industries are now becoming more common.¹⁴ With the advent of projects such as the Human Genome Project and other biological research, where discoveries are useful for multiple and often unknown and unforeseeable downstream inventions, scientists from several levels of the development process or from different research fields must interact together.¹⁵ An unescapable consequence of this interdisciplinary interaction is communication and the sharing of ideas. This distribution of knowledge is important for the success of research and is encouraged by the patent laws.¹⁶

The Patent and Trademark Office (“PTO”) analyzes patentability of an invention by looking at the “prior art.”¹⁷ Prior art has traditionally included only public information, such as existing patents, patent applications,¹⁸ and journal articles.¹⁹ However, the Federal Circuit recently concluded that information disclosed to an inventor during private communications in a collaborative environment is considered prior art for the purpose of an obviousness determination.²⁰ The Patent Act, in section 103(c), prevents this type of communication from rendering a patent obvious if the collaborative effort occurs in one corporate entity.²¹ However, there is no

the growth of the internet has made long distance collaborations much easier.

Id.

14. *Id.*; see *Cooperative Research and Technology Enhancement (CREATE) Act of 2003: Hearing on H.R. 2391 Before the Subcomm. on Courts, the Internet and Intellectual Property of the House Comm. on the Judiciary*, 108th Cong. 7 (2003) (prepared statement of E. Jonathan Soderstrom, Ph.D.) [hereinafter *Cooperative Research and Technology Enhancement Act of 2003 Hearing*] (“The success of bringing . . . countless university inventions to the marketplace has depended on rich collaborations among scientists within the university; collaborations among scientists at different universities; and collaborations among university and industry scientists.”).

15. Interview with John Lamming, Associate General Counsel at Washington University, St. Louis, Mo. (Fall 2003) (on file with author). In addition, research may require resources that may not be found in one place: Resources such as humans, facilities and equipment, financial support, and sometimes, geographic location. *Id.*

16. See *infra* note 26.

17. See *infra* note 40.

18. Until recently, patent applications in the United States were kept secret until issue of patent or abandonment. A recent amendment changed this; now the disclosures of a United States patent application become *prior art as of the earliest effective filing date*. Pub. L. No. 106-113, § 4505, 113 Stat. 1501, 1501A-565 (Nov. 29, 1999) (amending 35 U.S.C. § 102(e)).

19. These elements are laid out in sections 102(a), (b), (e), and (g). See *OddzOn*, 122 F.3d at 1402 (“Thus, the patent laws have not generally recognized as prior art that which is not accessible to the public.”); see also *In re Bass*, 474 F.2d 1276, 1290 (C.C.P.A. 1973) (“Of course, [35 U.S.C. § 102] (c), (d), and (f) have no relation to § 103 and no relevancy to what is ‘prior art’ under § 103.”).

20. *OddzOn*, 122 F.3d at 1403-04 (“We therefore hold that subject matter derived from another not only is itself unpatentable to the party who derived it under § 102(f), but, when combined with other prior art, may make a resulting obvious invention unpatentable to that party under a combination of §§ 102(f) and 103.”).

21. 35 U.S.C. § 103(c) reads:

protection if two inventors in the collaboration are from separate industries.²²

B. Statutory History

Article I, section 8, clause 8 of the Constitution grants Congress broad power to protect authors and inventors by delegating to Congress the authority to grant exclusive rights over creations and inventions.²³ Congress may not overreach its authority by enlarging the patent monopoly without regard to the innovation, advancement, or social benefit gained.²⁴

Patent law has developed over the past 215 years.²⁵ The goal of the patent system is to benefit society by encouraging innovation and

Subject matter developed by another person, which qualifies as prior art only under one or more [of] subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the *subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.*

35 U.S.C. § 103(c) (2000) (emphasis added).

22. *See id.*

23. Article I, § 8, clause 8 states that Congress has the power “To promote . . . useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their . . . Discoveries.” U.S. CONST. art. I, § 8, cl. 8.

24. *Graham et al. v. John Deere Co.*, 383 U.S. 1, 5–6 (1966). Thus, Congress may not grant patents that remove existing knowledge from the public domain or that restrict free access to materials already available. *Id.*

25. The Patent Act of 1790 was America’s first patent statute, but the 1952 Act did more to strengthen the area of law. *See CHISUM ET AL., PRINCIPLES OF PATENT LAW*, 18–22 (Robert Clark et al. eds., 2d ed. 2001) [hereinafter *CHISUM ET AL.*]. The United States Patent Office, while already operating, was not officially recognized by law until the 1836 Act. *Id.* at 20. There is no exact date when the Office was created. *Id.* at 20 n.82. It was neither a part of the Act of 1790 nor the Act of 1793. *Id.* Dr. William Thornton was appointed to the Patent Office in 1802, making it a distinct division of the Department of State. *Id.* However, it was not until the 1836 Act that the Patent Office gained legitimacy in the eyes of the law and a building was constructed for the Office. *Id.* The United States Court of Appeals for the Federal Circuit was created by Congress in 1982 primarily in response to an increase in forum shopping in patent litigation, a lack of uniformity in the patent laws, and a high invalidity rate among litigated patents. *See id.* at 25 n.95 (citing H.R. REP. NO. 312, 97th Cong., 1st Sess. 20–22 (1981)).

Some circuit courts are regarded as “pro-patent” and others “anti-patent,” and much time and money is expended in “shopping” for a favorable venue. [In addition,] the validity of a patent is too dependent upon geography (*i.e.*, the accident of judicial venue) to make effective business planning possible . . . A single court of appeals for patent cases will promote certainty where it is lacking to a significant degree and will reduce, if not eliminate, the forum-shopping that now occurs.

Id.; *see also id.* (citing S. REP. NO. 275, 97th Cong., 1st Sess. 5 (1981) (“The creation of the Court of Appeals for the Federal Circuit will produce desirable uniformity in this area of . . . [patent] law. Such uniformity will reduce the forum-shopping that is common to patent litigation.”)).

promoting public disclosure of technological advances.²⁶ The patent laws achieve this goal by offering inventors exclusive rights for a limited time period.²⁷

C. *Mechanics of Patent Law*

Patent laws encourage creation of new inventions by guaranteeing inventors that their ideas will be protected.²⁸ The system provides a patent holder with negative rights, meaning the right to exclude someone from using, rather than include someone in using, the invention.²⁹ The patent grant is often viewed as a contract between society and the patentee.³⁰ The inventor, as consideration to the public, provides a new and useful invention.³¹ In return, the public gives the inventor a monopoly expressed by the claims of the patent.³² The inventor risks losing his or her secrecy if the patent is held to be invalid or unenforceable.³³ However, in earning a temporary monopoly, the inventor receives the opportunity to earn back the money spent in research and development.³⁴ The system also encourages the increased flow of information.³⁵ A very important effect of the patent system is to dispel secrecy, which would interfere with the advances of the basic norms of science.³⁶

An invention, to be patentable, must be both novel and nonobvious.³⁷ The novelty requirement demands that something new must be contributed

26. CHISUM ET AL., *supra* note 25, at 70–75.

27. *Diamond v. Chakrabarty*, 447 U.S. 303, 307 (1980) (“The patent laws promote this progress by offering inventors exclusive rights for a limited period as an incentive for their inventiveness and research efforts.”); *see infra* note 28.

28. *See Griffith Rubber Mills v. Hoffar*, 313 F.2d 1, 3 (9th Cir. 1963) (indicating that “patents are issued not for private benefit but for the public good; they grant a monopoly for a limited period as an incentive to the disclosure of innovations which in the end will add to the fund of freely available knowledge[.]”); *see also* Lawrence M. Sung, *Collegiality and Collaboration in the Age of Exclusivity*, 3 DEPAUL J. HEALTH CARE L. 411, 412–13 (Spring/Summer 2000) (explaining that “the patent system seeks to promote innovation by providing inventors with an opportunity for pecuniary reward through the government grant of temporary exclusionary rights in their inventions[.]”).

29. CHISUM ET AL., *supra* note 25, at 3.

30. *Davis Airfoils, Inc. v. United States*, 124 F. Supp. 350, 352 (Ct. Cl. 1954).

31. *Id.*

32. *Id.*

33. CHISUM ET AL., *supra* note 25, at 80.

34. *Id.* at 70–71.

35. *Id.* at 72.

36. *Id.*

37. *Id.* at 93 n.9. *See* 35 U.S.C. §§ 102, 103 (2000). A possible third requirement, utility, exists for patentability. Utility requires that the invention is useful. CHISUM ET AL., *supra* note 25, at 707. This requirement, however, will not be discussed in detail because it is not relevant to this Note.

to society.³⁸ The nonobviousness requirement demands that the invention be significantly different from the prior art from the standpoint of a person having ordinary skill in the art.³⁹ “Prior art” is a term used in patent law to refer to known technical information.⁴⁰ A “person having ordinary skill in

38. CHISUM ET AL., *supra* note 25, at 323. The novelty requirement is embodied in sections 102(a), (e) and (g), which read as follows:

§ 102. Conditions for patentability; novelty and loss of right to patent

A person shall be entitled to a patent unless—

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

...

(e) The [sic] invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent . . . or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent . . . ; or

...

(g) (1) during the course of an interference . . . another inventor involved therein establishes, . . . that before such person’s invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or (2) before such person’s invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

35 U.S.C. § 102(a), (e), (g) (2000).

Section 102(a) contains the first-to-invent rule, which dominates the novelty analysis. See MARTIN J. ADELMAN ET AL., *CASES AND MATERIALS ON PATENT LAW* 248 (2d ed. 2003) [hereinafter ADELMAN ET AL.]. For discussion on first-to-invent, see *infra* note 55. “Section 102(a) also requires some form of public knowledge of the first inventor’s invention.” ADELMAN ET AL., *supra*, at 248. Section 102(e) concerns a “special” category of secret knowledge, a patent application. *Id.* Section 102(g) “covers” secret work by an inventor that becomes public after the invention of the second inventor. *Id.*

39. 35 U.S.C. § 103(a) states:

[a] patent may not be obtained [even though the claimed invention may be novel] . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art

35 U.S.C. § 103(a) (2000).

See P.J. Federico, *Commentary on the New Patent Act*, 75 J. PAT. TRAD. OFF. SOC’Y. 161, 180–81 (1993) (“An invention which has been made, and which is new in the sense that the same thing has not been made before, may still not be patentable if the difference between the new thing and what was known before is not considered sufficiently great to warrant a patent.”) [hereinafter Federico].

40. CHISUM ET AL., *supra* note 25, at 93. According to Chisum, prior art is defined as follows:

[P]rior art constitutes those references which may be used to determine the novelty and nonobviousness of claimed subject matter in a patent application or patent. It includes both documentary sources (patents and publications from anywhere in the world) and nondocumentary sources (things known, used or invented in the United States). A reference must be in the art pertinent to the invention in question or in an analogous art. A reference must be dated prior to the applicant’s date of invention or, in the case of statutory bars, more

the art”⁴¹ is a specialized “reasonable man” with the level of skill inferred by reviewing the prior art.⁴² This hypothetical person reflects the capabilities of actual practitioners who are active in the field.⁴³

The nonobviousness requirement is codified in 35 U.S.C. § 103(a): “A patent may not be obtained . . . if the difference[s] between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art”⁴⁴ This requirement is broader than the novelty requirement and guards against the risk that the claimed invention may be scattered throughout the prior art and may be “obvious” to a person skilled in the art.⁴⁵

The prior art factual inquiry used for a section 103 obviousness determination is guided by the definitions in section 102.⁴⁶ Section 102(e) states that a disclosure of a United States patent application is prior art to subject matter invented by others after its U.S. filing date once the PTO

than one year prior to his date of application for a patent.

1 DONALD S. CHISUM, PATENTS: A TREATISE ON THE LAW OF PATENTABILITY, VALIDITY, AND INFRINGEMENT (2003) [hereinafter CHISUM ON PATENTS], Glossary: Prior Art.

Under section 102(e), prior art takes two forms: publicly accessible and secret. CHISUM ET AL., *supra* note 25, at 324. The secret prior art under section 102(e) is information contained in a patent application. The patent application will serve as prior art if the application discloses the claimed subject matter and ultimately issues as a patent. *Id.*

41. The acronym, PHOSITA, was coined by Cyril A. Soans in his article *Some Absurd Presumptions in Patent Cases*, 10 IDEA 433, 438 (1966).

42. Jean F. Rydstrom, Annotation, *Comment Note—Application and Effect of 35 U.S.C.S. § 103, Requiring Nonobvious Subject Matter, in Determining Validity of Patents*, 23 A.L.R. FED. 326 § 11a 385 (2003) (stating a specialized “reasonable man” emerges in several recent Supreme Court decisions, and the level of his skill may be inferred by reviewing the prior art).

43. John R. Thomas, *Formalism at the Federal Circuit*, 52 AM. U. L. REV. 771, 802 (2003) (“[The] fictitious practitioner should be as closely akin to the capabilities of skilled artisans as possible.”).

44. 35 U.S.C. § 103(a) (2000).

45. CHISUM ET AL., *supra* note 25, at 514. The test for obviousness of invention to a person of ordinary skill in the applicable art includes review of: (1) the scope and content of the prior art; (2) differences between prior art and claims at issue; and (3) the level of ordinary skill in the art. *Dann v. Johnston*, 425 U.S. 219, 226 (1976). The mere existence of differences between prior art and invention does not establish nonobviousness. *Id.* at 230. *See also* *In Re Wood*, 599 F.2d 1032, 1037 (C.C.P.A. 1979) (“Test for obviousness is not whether the features of one reference may be bodily incorporated into another reference Rather, we look to see whether combined *teachings* render the claimed subject matter obvious.”).

46. Federico, *supra* note 39, at 180 (“The antecedent of the words ‘the prior art,’ which here appear in a statute for the first time, lies in the phrase ‘disclosed or described as set forth in section 102’ and hence these words refer to material specified in section 102 as the basis for comparison.”). *See also* *Riverwood International Corp. v. R.A. Jones & Co.*, 324 F.3d 1346, 1354 (Fed. Cir. 2003), *citing* *In re Wertheim*, 646 F.2d 527, 532 (C.C.P.A. 1981) (“The term ‘prior art’ as used in section 103 refers at least to the statutory material named in 35 U.S.C. § 102.”).

publishes that application or issues the patent.⁴⁷ Section 102(f) is called a derivation provision because an inventor is not entitled to the patent unless he invented the subject matter;⁴⁸ if the inventor derived the subject matter from someone else he is not entitled to the patent.⁴⁹ Derivation is demonstrated when the party from whom the invention was derived possessed a complete conception of the invention, and there was a sufficient communication to the party charged with derivation to enable a person of ordinary skill in the art to construct and operate the invention.⁵⁰ Section 102(g) states that a person is not entitled to a patent if, before the patent applicant's invention, the same invention is made in this country by another inventor who had not "abandoned, suppressed, or concealed it."⁵¹

The date attributed to a prior art reference for patentability purposes is the effective date.⁵² The earliest date the inventor may claim benefit under the statute is the critical date.⁵³ The invention is thus anticipated if the effective date of the reference is earlier than this critical date.⁵⁴ This system is called the first-to-invent rule⁵⁵ and results in the issuance of a

47. 35 U.S.C. § 102(e) (2000) (stating a patent is precluded when the "invention was described in (1) an application for patent, published under 122(b), by another filed in the United States before the invention by the applicant for patent . . ."). See CHISUM ON PATENTS, *supra* note 40, § 3.07[2], at 3-208 ("The disclosures of a United States patent application become prior art as of the earliest effective filing date only after the patent actually issues containing such disclosure.")

The "effective date" is the application filing date, not the patent issuance date. Thus, material is prior art for purposes of obviousness at a time when the material is not available to the public. See *In re Bartfeld*, 925 F.2d 1450, 1451 n.4 (Fed. Cir. 1991) ("The effective date of the [section] 102(e) reference is the application filing date, not the patent issuance date."). For a discussion on "effective date," see *infra* note 52.

48. 2 CHISUM ON PATENTS, *supra* note 40, § 5.03[3][d], at 168 (stating that in its strictest form, section 102(f) means that a person who received a complete idea for the invention from another source cannot receive a patent on the idea).

49. See *Ex Parte Billotet and Fechner*, 192 U.S.P.Q. 413, 415-16 (P. O. Bd. App. 1976) ("Paragraph (f) was historically considered as a section compelling the inventor to be the party applying for a patent and traditionally is applicable in the situation where an applicant has derived an invention from another.")

50. See *Davis v. Reddy*, 620 F.2d 885, 889 (C.C.P.A. 1980) ("Since we have held that Reddy has failed to prove conception of the invention prior to the meeting by a preponderance of the evidence, it follows that he has also failed to prove derivation of the invention by Davis et al. at the meeting.")

51. 35 U.S.C. § 102(g) (2000).

52. CHISUM ET AL., *supra* note 25, at 326.

53. In a section 102(a) case, the critical date is typically the date of the invention. *Id.* However, in a section 102(b) case, the point in time one year prior to the filing date is termed the critical date. *Id.* See also ADELMAN ET AL., *supra* note 38, at 161. Thus, a one-year "grace period" exists, which allows an inventor to determine the desirability of patent protection and to prepare an application. *Id.*

54. CHISUM ET AL., *supra* note 25, at 326. See, e.g., *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1576 (Fed. Cir. 1996) (examining a section 102(a) case, the court stated the issue as whether the publication of the alleged prior art was before the invention date).

55. The first-to-invent rule is stated in section 102(a) by supplying a basis for rejection of an application which describes an invention "known or used . . . in this country, or patented or described

patent to the party who has prior inventorship and who deserves to receive a patent, not necessarily the first applicant to file.⁵⁶ The first-to-invent rule can be difficult to apply and requires factual determinations.⁵⁷ This system, however, rewards the actual inventor and not merely the person who is fastest to file.⁵⁸

D. Early Jurisprudence of Section 103 and Section 102 Prior Art

In *In re Bass*,⁵⁹ the PTO rejected claims in a patent application that named Bass, Jenkins, and Horvat as co-inventors, as being obvious over earlier filed patents to Bass and Jenkins.⁶⁰ The rationale was that the

in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent.” 35 U.S.C. § 102(a) (2000). See ADELMAN ET AL., *supra* note 38, at 160 (“When multiple persons claim the right to a patent on a given technology, this system allows inventors who were not the first to reach the Patent Office to establish their right to the patent by demonstrating inventive acts prior to those of their competitors.”). See also *id.* at 179 (“The United States . . . promises a patent to the first inventor, regardless of whether someone else files an application earlier claiming the same invention.”).

56. The United States is the only patent-issuing country to have a first-to-invent system. ADELMAN ET AL., *supra* note 38, at 160. Other countries have a first-to-file regime in which the inventor who first files a patent application obtains the patent, even if another actually invented the technology first. *Id.*

57. Section 102(g) states the general rule that the first inventor to reduce an invention to practice has priority. 35 U.S.C. § 102(g) (2000) (“In determining priority of invention . . . there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice . . .”). If an inventor is first to conceive an invention but the second to reduce it to practice, he can get priority only if he shows he was diligent from the time of conception to the time of reduction to practice. See *Christie v. Seybold*, 55 F. 69, 76 (6th Cir. 1893).

It is obvious . . . that the man who first reduces an invention to practice is *prima facie* the first and true inventor, but that the man who first conceives, and, in a mental sense, first invents, a machine, art, or composition of matter, may date his patentable invention back to the time of its conception, if he connects the conception with its reduction to practice by reasonable diligence on his part, so that they are substantially one continuous act.

Id.; *Mahurkar*, 79 F.3d at 1577 (“[P]riority of the invention goes to the first party to reduce an invention to practice unless the other party can show that it was the first to conceive the invention and that it exercised reasonable diligence in later reducing that invention to practice.”) (internal citations omitted); See ADELMAN ET AL., *supra* note 38, at 259.

58. Jennifer Chung, Comment, *Does Simultaneous Research Make an Invention Obvious? The 35 U.S.C. § 103 Nonobvious Requirement for Patents as Applied to the Simultaneous Research Problem*, 11 ALB. L.J. SCI. & TECH. 337, 342 (2001).

59. 474 F.2d 1276 (C.C.P.A. 1973).

60. *Id.* at 1277. The applicants, Bass, Jenkins and Horvat claimed a vacuum system to control waste on textile cording machines. *Id.* On March 16, 1967, they filed an application as a continuation-in-part of an October 11, 1965, application. *Id.* In rejecting the claims as obvious, the Patent Office relied on machinery disclosed in two patents: The first issued to Bass and Horvat on April 25, 1967, from an application filed August 23, 1965, and the second issued to Jenkins on an application filed October 13, 1964. *Id.* The applicants filed affidavits under Rule 131 to establish a date of invention prior to the filing dates of the two patents. *Id.* at 1281. The Patent Office found the affidavits, while

claims in the later filed patent application were merely an obvious variation of what had been reduced to practice in the earlier filed patents.⁶¹ Thus, the application was rejected under section 103 by virtue of section 102(g).⁶² This rejection was deemed applicable because the “inventive entity” of the earlier filed patents was not identical to the “inventive identity” of the later filed patent application.⁶³ Rejection of the patent was also deemed appropriate even though the invention and the earlier reduction to practice occurred within the same company.⁶⁴ This case first established that section 102(g) could be used in combination with other references to support a section 103 nonobvious rejection.⁶⁵

In 1984, amendments to the Patent Act⁶⁶ were passed in direct response to *In Re Bass*, which some argued created a disincentive to file patents early and discouraged communications among co-workers.⁶⁷ Congress amended section 103 to disqualify events that fall exclusively within sections 102(f) or (g) from use as prior art under section 103 under specific conditions.⁶⁸ This amendment became section 103(c), which reads:

Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of

sufficient for removing the two patents as references, insufficient to remove the work as evidence of prior invention under section 102(g). *Id.* at 1281–82. Due to the relationship between the parties and the ownership of both applications by the same company, it can be assumed that the three applications were filed in the order of invention. *Id.* at 1282.

61. *Id.* at 1277.

62. *Id.* at 1282.

63. *Id.* at 1288.

64. *Id.* at 1287.

65. *In re Bass* was followed by *In re Clemens*, 622 F.2d 1029 (C.C.P.A. 1980). In *Clemens*, there was no knowledge of the first invention by the second inventor. The court held that for a prior invention to qualify as prior art under section 102(g), there must be a communication of the invention. *Id.* at 1039. This ruling changed with the decision of *Kimberly-Clark Corp. v. Johnson & Johnson Personal Prod. Co.* The court stated that section 102(g) can be considered prior art under section 103 and the personal knowledge requirement from *Clemens* was irrelevant in the analysis. 745 F.2d 1437, 1445 (Fed. Cir. 1984). Finally, in *E.I. DuPont de Nemours & Co. v. Phillips Petroleum Co.*, the court held that section 102(g) subject matter is prior art under section 103 whether or not personal knowledge is proven. 849 F.2d 1430, 1436 (Fed. Cir. 1989).

66. Patent Law Amendments Act of 1984, H.R. 6286, 98th Cong. (1984) (codified at 35 U.S.C. § 116 (1994)) [hereinafter H.R. 6286].

67. Section by Section: Patent Law Amendments of 1984, 130 Cong. Rec. H10525, H.R. 6286, 98th Cong. (1984), reprinted in 1984 U.S.C.A.N. 5827, 5833 (1984) [hereinafter Section by Section: Patent Law Amendments of 1984] (“[T]he bill changes a complex body of case law which discourages communication among members of research teams working in corporations, universities or other organizations.”).

68. H.R. 6286, *supra* note 66. In 1999, (e) was added as well in the American Inventor’s Protection Act, H.R. 1907, 106th Cong. (1999).

section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.⁶⁹

Historically, it is very clear that this amendment was intended to avoid the invalidation of patents under section 103 on the basis of the work of fellow employees engaged in team research.⁷⁰

Unlike section 102(g), controversy surrounds whether section 102(f) is a prior art section making the section 102(f) art available in obviousness determinations.⁷¹ The 102(f) subsection applies to public knowledge and to private communications, including communications made under a secrecy agreement.⁷² The historical concept of a “completed idea” has defeated the claim that section 102(f) is prior art under section 103.⁷³ The issue of section 102(f) as prior art has arisen in three recent cases: *Lamb-*

69. 35 U.S.C. § 103(c) (2000).

70. *See* *Kimberly-Clark Corp. v. Procter & Gamble Distributing Co., Inc.*, 973 F.2d 911, 917 (Fed. Cir. 1992).

A purpose of the 1984 amendment to Section 103 was to overturn a line of cases under which a prior invention which was not public could be treated under Section 102(g) as prior art for purposes of Section 103 with respect to a later invention made by another employee of the same organization.

Id.; *Patent Law Improvements Act: Hearing on S. 1535 and S. 1841 Before the Subcomm. on Patents, Copyrights, and Trademarks of the Senate Comm. on the Judiciary*, 98th Cong. 157 (1984) (prepared statement by John E. Maurer, General Consulting Attorney, Monsanto Co.):

In view of the increasingly complex nature of the technological problems associated with research today, and the increasing cost of research, it is not sound public policy to penalize organizations which take a team approach to the solution of problems. By allowing this situation to continue as is is to add a further element of unreliability to the patent grant as a driving force for innovation. This situation is also counterproductive to the fundamental reason for the patent system because it discourages the disclosure of new technology through patenting.

Id.; 130 Cong. Rec. H28071 (Oct. 1, 1984), *reprinted in* 1984 U.S.C.C.A.N. 5833–34 (discussing problems caused by *In Re Bass*); 129 Cong. Rec. H34801 (daily ed. Nov. 18, 1983) (statement by Rep. Kastenmeier).

H.R. 4525, provides that unpublished information known to the inventor does not constitute prior art in the field of the invention, and therefore cannot serve to defeat the patentability of that invention . . . This provision has the net effect of overruling *In re Bass* . . . This amendment, or a substantially similar bill, will be of material benefit to university and corporate research laboratories where the free exchange of ideas and concepts may have been hampered by the current state of the law with respect to what constitutes “prior art.”

Id.

71. Steffe, *supra* note 2, at 161. Subsection (e), however, has long been established as prior art since it is public information. *See Oddzon*, 122 F.3d at 1401.

72. Steffe, *supra* note 2, at 162.

73. Philip McGarrigle, *Comment*, *Oddzon Prod., Inc. v. Just Toys, Inc.: Prior Knowledge of 35 U.S.C. § 102(f) Clarified*, 38 IDEA 673, 677 (1998).

Weston, Inc. v. McCain Foods, Ltd.;⁷⁴ *Gambro Lundia AB v. Baxter Healthcare Corp.*;⁷⁵ and *OddzOn Products, Inc. v. Just Toys, Inc.*⁷⁶

In *Lamb-Weston*, the issue was whether the patent was invalid when the prior art subject matter only qualified as such under section 102(f).⁷⁷ However, the court never reached the question of whether section 102(f) is prior art for section 103 purposes because it was the machines which produced the products at issue that were protected by confidentiality agreements, not the products themselves.⁷⁸ In dicta, the court noted that the amendment to section 103 seemed to provide authority for considering section 102(f) in the context of section 103.⁷⁹

74. 78 F.3d 540 (Fed. Cir. 1996).

75. 110 F.3d 1573 (Fed. Cir. 1997).

76. *Oddzon*, 122 F.3d at 1396.

77. 78 F.3d at 544.

78. *Id.* *Lamb-Weston*, under confidentiality agreements, examined two different apparatuses used for cutting frozen potato products. *Id.* at 542. It then began manufacturing and using its own machine and patented the “waffle fries” it made. *Id.* A competitor began making and selling waffle fries, and *Lamb-Weston* sued for infringement. *Id.* at 543. The district court found the patent obvious due to the apparatuses examined by *Lamb-Weston* under the confidentiality agreement. *Id.* The Court of Appeals for the Federal Circuit found that the potato products produced by the apparatus, not the devices themselves, provide the motivation to combine, and these products were not subject to a confidentiality agreement. *Id.* at 544.

79. In a footnote, the court states: “This court need not reach the significant issue of whether § 102(f) of title 35 defines prior art for an obviousness determination under § 103 . . .” *Id.* at 544. The footnote also includes other potential authority for the conclusion that section 102(f) can be considered under section 103.

However, the following contrary authorities should also be considered: 35 U.S.C. § 103 (1994) (“Subject matter developed by another person which qualifies as prior art only under subsection (f) or (g) of section 102 . . . [shall not preclude patentability if owned by the same entity.]”) (emphasis added); 2 Donald S. Chisum, Patents, § 5.03 [3] (1994) (“However, it is now clear that section 102(e) (description in prior co-pending patent application that ripens into a patent), section 102(g) (prior invention), and section 102 (f) (derivation from another) may also be relied upon to show obviousness.”) (emphasis added); *Dale Elec. v. R.C.L. Elec.*, 488 F.2d 382, 386, 180 USPQ (BNA) 225, 227 (1st Cir. 1973) (Actual knowledge of invention by another makes references defined by 102(f) prior art for obviousness determinations.); *New England Braiding Co. v. A.W. Chesterton Co.*, 970 F.2d 878, 883, 23 USPQ2D (BNA) 1622, 1626 (Fed. Cir. 1992) (“To invalidate a patent for derivation of invention, a party must demonstrate that the named inventor . . . acquired knowledge of the claimed invention from another, or at least so much of the claimed invention as would have made it obvious to one of ordinary skill in the art.”); 37 C.F.R. § 1.106(d) (1995) (“Subject matter which is developed by another person which qualifies as prior art only under 35 U.S.C. 102(f) or (g) may be used as prior art under 35 U.S.C. 103 against a claimed invention . . .”).

Id.

Judge Newman, in her dissent, responded to the majority:

The panel majority cites by footnote the second paragraph of § 103 as “authority” for the proposition that § 102(f) information is prior art. The cited provision was added to § 103 in 1984, to facilitate team research by precluding the citation of the work of one team member as prior art against the invention of another . . . The majority also cites *Dale Elect. v. R.C.L. Elect.*, . . . which states broadly that all of § 102 qualifies as prior art, an oversimplification

In *Gambro*,⁸⁰ the court reviewed the dictum in *New England Braiding Co. v. A.W. Chesterton Co.*⁸¹ The *Gambro* court found that this dictum did not in fact incorporate a determination of obviousness into section 102(f).⁸² Thus, the court concluded that the district court incorrectly introduced an obviousness analysis into the test for derivation when the lower court stated that Baxter did not need to prove communication of the entire conception, but rather only so much of the invention that would have made it obvious to one ordinarily skilled in the art.⁸³ Instead, applying the standard of “whether the communication enabled one of ordinary skill in the art to make the patented invention,” the appellate court held that there was insufficient evidence of

never endorsed by the Federal Circuit. Nor does the partial quotation from *Chisum*, or the usage in *New England Braiding*, advance consideration of the matter.

Id. at 549 n.5. Instead, Judge Newman uses the language from *In re Bass*:

Section 102(f) relates to “derivation,” the taking of the invention of another and patenting it as one’s own. It is irrelevant whether or not that invention is also prior art. As explained in *In re Bass*, § 102(f) relates to originality, that “one who ‘did not himself invent the subject matter’ (*i.e.*, he did not originate it) has no right to a patent on it.” . . . The court explained in *Bass* that § 102(f) has “no relation to § 103 and no relevancy to what is ‘prior art’ under § 103.”

Id. at 549.

80. 110 F.3d 1573. Repgreen Limited (“Repgreen”) is a British bioengineering company. *Id.* at 1575. Repgreen improved ultrafiltrate calculation by the work of Keith Wittingham, Repgreen’s chief designer, in late 1977. *Id.* In the late 1970s, Gambro sought to improve ultrafiltrate monitoring, so during 1979, Wittingham met with Gambro engineers to discuss Repgreen’s development of an ultrafiltrate monitor for Gambro. *Id.* In July 1979 Gambro purchased Repgreen’s hemodialysis technology and worked for three years to improve the ultrafiltration monitors. *Id.* Finally, in June 1982, Gambro engineers refined the monitoring system. *Id.* Gambro filed a patent on a system to improve ultrafiltrate monitoring based on technology purchased from Repgreen. *Id.* Subsequently, Baxter began marketing their own monitoring device and Gambro sued for infringement of their patent. *Id.* at 1576. Baxter alleges the patent was unenforceable because it was obvious due to conversations Wittingham had with Gambro employees. *Id.*

81. *New England Braiding Co., Inc. v. A.W. Chesterton Co.*, 970 F.2d 878 (Fed. Cir. 1992). In *New England Braiding*, an engineer at the defendant company had overcome a problem with braided compression packing in the early 1970s. *Id.* at 881. Another engineer, who had worked at Chesterton during this period and then left the company, subsequently filed and obtained his own patent. *Id.* He licensed his patent to New England Braiding, who then sued Chesterton. *Id.* at 882. The district court denied New England Braiding’s motion for a preliminary injunction on the basis of a section 102(f) and section 103 combination. *Id.* The Federal Circuit, while not deciding the substantive section 102(f) issue, decided that the district court did not seriously misjudge the evidence. *Id.* at 884.

In dictum the court stated:

To invalidate a patent for derivation of invention, a party must demonstrate that the named inventor in the patent acquired knowledge of the claimed invention from another, or at least so much of the claimed invention as would have made it obvious to one of ordinary skill in the art.

Id. at 883.

82. 110 F.3d at 1578.

83. *Id.* at 1577.

communication.⁸⁴ As a result of these cases, the issue of section 102(f) as prior art was not resolved and was ripe for the decision in *OddzOn Products*.⁸⁵

E. *OddzOn Decision*

OddzOn is a toy and sporting goods company that has a patent on the “Vortex,” a foam football-shaped ball with a tail and fin structure.⁸⁶ OddzOn sued Just Toys for design patent infringement and the district court found, on cross-motions for summary judgment, that the patent was valid.⁸⁷ According to the district court, two confidential designs had been disclosed to the inventor.⁸⁸ These designs qualified as subject matter under section 102(f), and furthermore, the district court determined that the section 102(f) prior art could be combined with other prior art designs for purposes of a challenge to validity under section 103.⁸⁹ However, the district court held that the patented design was not obvious in light of the prior art, including these two designs.⁹⁰ The Federal Circuit directly addressed the question of whether “subject matter encompassed within § 102(f) is prior art for purposes of an obviousness inquiry under § 103.”⁹¹ The court held that “a fair reading of § 103, as amended in 1984, leads to the conclusion that § 102(f) is a prior art provision for purposes of § 103.”⁹²

The *OddzOn* court examined *In Re Bass* and agreed that because section 102(f) is not “public” information, it is counterintuitive to consider it as prior art.⁹³ However, the court acknowledged that after *In re Bass* was

84. *Id.* at 1578.

85. *OddzOn*, 122 F.3d at 1396.

86. *Id.* at 1399.

87. *Id.* at 1400.

88. *Id.*

89. *Id.*

90. *Id.*

91. *Id.* at 1401. OddzOn argues that because these disclosures are not known to the public, they are not prior art, which provides actual or constructive public knowledge. *Id.* OddzOn contends that while the disclosures may, under section 102(f), constitute patent-defeating subject matter, they cannot be combined with “real” prior art to defeat patentability in a combination of section 102(f) and section 103. *Id.*

92. *Id.*

93. *Id.*

Thus, the patent laws have not generally recognized as prior art that which is not accessible to the public. It has been a basic principle of patent law, subject to minor exceptions, that prior art is: technology already available to the public. It is available, in legal theory at least, when it is described in the world’s accessible literature, including patents, or has been publicly known or in . . . public use or on sale in this country. That is the real meaning of prior art in

decided, Congress amended section 103, and the court analyzed the effect of the amendments on the state of the law.⁹⁴ The court noted that the statutory language clearly stated that subsections (f) and (g) cannot be combined with other prior art to render a claimed invention obvious when the relevant prior art is commonly owned with the claimed invention at the time the invention was made.⁹⁵ Thus, the court concluded that even though the statute does not explicitly state that subsection (f) creates a type of prior art for purposes of section 103, the language does state that subsection (f) is not prior art in limited circumstances and therefore clearly implies that in other circumstances, it would be prior art.⁹⁶ The court then held: “subject matter derived from another not only is itself unpatentable to the party who derived it under § 102(f), but, when combined with other prior art, may make a resulting obvious invention unpatentable to that party under a combination of §§ 102(f) and 103.”⁹⁷

legal theory—it is knowledge that is available, including what would be obvious from it, at a given time, to a person of ordinary skill in the art.

Id. at 1402 (citing *Kimberly-Clark Corp.*, 745 F.2d at 1453) (internal citations omitted).

94. *Id.* at 1402–03.

95. *Id.* at 1403.

96. *Id.*

While the statute does not expressly state in so many words that § 102(f) creates a type of prior art for purposes of § 103, nonetheless that conclusion is inescapable; the language that states that § 102(f) subject matter is not prior art under limited circumstances clearly implies that it is prior art otherwise. That is what Congress wrote into law in 1984 and that is the way we must read the statute.

Id.

97. *Id.* at 1403–04. The court decided to take an affirmative stand on the issue of whether section 102(f) is prior art for purposes of section 103. However, the court did leave open an invitation for Congress to change the outcome.

It is sometimes more important that a close question be settled one way or another than which way it is settled. We settle the issue here (subject of course to any later intervention by Congress or review by the Supreme Court), and do so in a manner that best comports with the voice of Congress. Thus, while there is a basis for an opposite conclusion, principally based on the fact that § 102(f) does not refer to public activity, as do the other provisions that clearly define prior art, nonetheless we cannot escape the import of the 1984 amendment.

Id. at 1403.

The court rationalized that the conclusion was not illogical. *Id.* at 1403. An invention, A', that is obvious in view of subject matter A, which is derived from another, is unpatentable. The obvious invention, A', may not be unpatentable if A and A' are designated to the same inventor. It also may not be unpatentable if the inventor of A' did not receive disclosure of A. However, it would be unpatentable to the party who did receive the disclosure. *Id.*

F. Proposed Legislation

Proposed legislation, H.R. 2391, entitled the Cooperative Research and Technology Enhancement (“CREATE”) Act of 2003,⁹⁸ amends the wording of section 102(f) and section 103(c) in response to the *OddzOn* decision.⁹⁹ The bill proposes an exception to prior art under section 102(f): “except that subject matter under this subsection shall not be considered prior art or as evidence of obviousness under section 103 of this title.”¹⁰⁰ The bill proposes to change section 103(c) to read as follows:

Subject matter developed by another person, which qualifies as prior art only under one or both of subsections (e) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time of the earliest filing date for which a benefit is sought under this title, owned by the same person or subject to an obligation of assignment to the same person.¹⁰¹

H.R. 2391 is proposed in response to the holding in *OddzOn*.¹⁰² The purpose of H.R. 2391 is “[one, to] promote communication among team

98. Cooperative Research and Technology Enhancement (“CREATE”) Act of 2003, H.R. 2391, 108th Cong. (2003). H.R. 2391 was amended and passed in the House of Representatives on March 10, 2004. The recent amendments resulted in a very different proposed bill. This Note discusses the theories, advantages and disadvantages of the bill before the recent amendments. For a discussion on the potential effects of the new amendments, see *infra* note 122. This Note does not support the bill as recently amended.

99. See *infra* note 102 and accompanying text.

100. H.R. 2391, *supra* note 98.

101. *Id.*

102. *Cooperative Research and Technology Enhancement Act of 2003 Hearing, supra* note 14, at 8 (prepared statement of E. Jonathan Soderstrom, Ph.D.) (“The holding in *OddzOn*, while accurately interpreting the law, nonetheless is a wake-up call to the patent community that information under 102(f) or (g) could invalidate a patent in the circumstances of a collaborative research effort.”). See *also id.* at 36 (statement of Jeffrey Paul Kushan):

In my view, the Federal Circuit in *OddzOn* correctly construed § 103(c), despite the inconsistency of its substantive effect with the historical function and purpose of § 102(f). I believe it would be unlikely that the Federal Circuit would reach a different conclusion regarding the role of § 102(f) “information” in an obviousness determination if similar facts were presented to it today Testimony offered last year by the university community cited a number of concerns with the state of the law after the 1984 amendments and the *OddzOn* opinion I believe that these concerns are legitimate. I also believe other significant problems exist with the state of the law after *OddzOn* Correcting these problems will require amendments to the patent law that eliminate the ability of confidential information that cannot qualify as prior art from being used in obviousness determinations.

Id.; *Patent Law and Non-profit Research Collaboration: Hearing Before the Subcomm. on Courts, the Internet and Intellectual Property of the House Comm. on the Judiciary*, 107th Cong. 1–2 (2002) [hereinafter *Patent Law and Non-profit Research Collaboration Hearing* (2002)] (statement by the

researchers located at multiple organizations; [two,] to discourage those who would use the discovery process to harass co-inventors who voluntarily collaborated on research; [three,] to increase public knowledge; and [four,] to accelerate the commercial availability of new inventions.”¹⁰³ Congress’ concern is the effect of the ruling in *OddzOn* on research universities and non-profit institutions.¹⁰⁴ The bill purports to encourage research collaboration between different institutions in two ways.¹⁰⁵ First, CREATE encourages communication between inventors, even where they are at separate institutions, by removing section 102(f) as prior art for section 103 purposes.¹⁰⁶ Second, CREATE provides flexibility for collaborating institutions by allowing them to make the decision of common ownership at the later date of patent application filing.¹⁰⁷

G. University Contributions

Universities are a fundamental source of research for companies and good for the economy generally.¹⁰⁸ University research results in fast

Honorable Howard Coble, a Representative in Congress from the State of North Carolina, and Chairman, Subcommittee on Courts, the Internet, and Intellectual Property):

The Subcommittee has been approached by the university community with serious concerns about an issue arising from a recent case interpreting the Patent Act. In the *OddzOn Products* case, the Court of Appeals for the Federal Circuit held that certain confidential material exchanged in the course of a research collaboration would defeat the patents later developed It is appropriate for our Subcommittee to review this apparent quirk under section 103(c) of the Patent Act . . .

Id.

103. *Cooperative Research and Technology Enhancement Act of 2003 Hearing, supra* note 14, at 2 (statement of the Honorable Lamar Smith, Chairman, Subcommittee on Courts, the Internet, and Intellectual Property).

104. *Patent Law and Non-profit Research Collaboration Hearing (2002), supra* note 102, at 4 (prepared statement by the Honorable Howard L. Berman, a Representative in Congress from the State of California, and Ranking Member, Subcommittee on Courts, the Internet, and Intellectual Property):

A decision by the Federal Circuit in 1997 showed us that information qualifying as prior art under subsections 102(f) or 102(g) of Title 35 can be used to dismiss a patent application as obvious under subsection 103(c) of Title 35 What makes this particularly troubling is that this affects research universities and non-profit institutions much more than it does private companies.

Id.

105. *Cooperative Research and Technology Enhancement Act of 2003 Hearing, supra* note 14, at 16 (prepared statement of Eric K. Steffe).

106. *Id.*

107. *Id.*

108. Universities transfer technology to facilitate the commercialization of research results for the public good, to reward, retain, and recruit faculty, to induce closer ties to industry, and to generate income and promote economic growth. See AUTM report: The Association of University Technology Managers, Inc., report entitled, *AUTM Licensing Survey, FY2002: A Survey Summary of Technology Licensing and Related Performance for U.S. and Canadian Academic and Nonprofit Institutions, and*

availability of inventions to the public, provides necessary funding for education, and exposes students and faculty to advanced training and technology.¹⁰⁹ University research also provides funding and patents in the scientific world.¹¹⁰ Research collaborations are a key element to the success of the United States economy as a whole.¹¹¹

Beginning with the 1984 amendments, legislators showed concern with communications in research collaboration.¹¹² The pending legislation is

Patent Management [and Investment] Firms, available at <http://www.autm.net/surveys/02/2002public.pdf> [hereinafter *AUTM Licensing Survey, FY2002 Survey Summary*], at 1 (finding that the total fiscal year of 2002 sponsored research expenditures were \$37 billion reported by 212 institutions; expenditures funded by federal government sources were \$27 billion reported by 192 institutions; expenditures funded by industry were \$3 billion reported by 199 institutions). In addition, many new and important products have resulted from university based research. See *id.* at 2–5 (listing examples of products resulting from university based research, including: SpeechEasy®, Partners for a Healthy Baby Curriculum, Oragenics, Inc., Double Transgenic Mouse for Alzheimers, and Broadband Wiring in the Hospital Industry). See AUTM report: The Association of University Technology Managers, Inc., report entitled, *AUTM Licensing Survey, FY2001: A Survey Summary of Technology Licensing (and Related) Performance for US and Canadian Academic and Nonprofit Institutions, and Patent Management Firms*, available at http://www.autm.net/index_ie.html [hereinafter *AUTM Licensing Survey, FY2001 Survey Summary*], at 1 (finding that sponsored research at academic institutions exceeded \$31 billion; over 4,000 new license and option agreements were executed with nearly 23,000 such agreements currently active; nearly 360 new commercial products were brought to the market under license to a commercial partner; and 494 new companies were formed on a license from an academic institution). See also NATIONAL RESEARCH COUNCIL, CAPITALIZING ON NEW NEEDS AND NEW OPPORTUNITIES: GOVERNMENT-INDUSTRY PARTNERSHIPS IN BIOTECHNOLOGY AND INFORMATION TECHNOLOGIES 1 (2001), available at <http://books.nap.edu/books/0309082579/html/1.html#pagetop> (“Government funding of research—especially university-based research—is an essential part of this framework of support. Policies encouraging partnerships and other cooperative arrangements among universities, industry, and the government have proved, in some cases, to be effective measures to foster the development of new productivity-enhancing technologies.”); NATIONAL SCIENCE BOARD, SCIENCE AND ENGINEERING INDICATORS—1998 32 (National Science Foundation 1998), available at <http://www.nsf.gov/sbe/srs/seind98/pdf/c4.pdf>.

Evidence of growing cooperation between federal laboratories and private sector entities can be seen in the number of cooperative research and development agreements (CRADAs) executed in the past few years. These formal agreements were created by Congress under the belief that federal laboratories hold valuable technological assets and that those assets should be used not only for pursuing an agency’s mission but also to improve the competitive position of U.S. firms. Thus, the purpose of CRADAs is to facilitate and expedite the transfer of technology from federal laboratories to the private sector by enabling private sector researchers to gain access to and take advantage of government R&D expertise and resources.

Id. (internal citations omitted).

109. See *Patent Law and Non-profit Research Collaboration Hearing* (2002), *supra* note 102, at 1 (statement of Honorable Howard Coble).

110. See *AUTM Licensing Survey, FY2002 Survey Summary*, *supra* note 108, at 1 (finding 7,741 new United States patents were filed by 216 institutions, 15,573 invention disclosures were reported by 221 institutions, and 26,086 licenses and options were active, reported by 217 institutions).

111. See NATIONAL RESEARCH COUNCIL, *supra* note 108, at 1.

112. See Section by Section: Patent Law Amendments of 1984, *supra* note 67, at 5833.

Section 104 of the bill changes a complex body of case law which discourages communications among members of research teams working in corporations, universities or

aimed at preserving the dynamic between academia and the private sector.¹¹³ Whether university research is governmentally funded and, thus, governed by the Bayh-Dole Act¹¹⁴ or privately funded, universities face legal obstacles in collaborations.¹¹⁵ In the face of the ruling in *OddzOn*, legislation is needed to sustain university collaboration with the private sector.

III. ANALYSIS

The Federal Circuit in the *OddzOn* decision created a strong tension with the legislative intent behind the 1984 amendments.¹¹⁶ Congress, in passing the 1984 amendments, recognized the importance of research teams, and the *OddzOn* decision significantly narrowed the protection of universities participating in research teams with private companies. However, the Federal Circuit was literally correct in interpreting the statute, and it is unlikely that another court can legally come to a different conclusion as long as the current wording of the Patent Act stands.¹¹⁷

other organizations . . . New technology often is developed by using background scientific or technical information known within an organization but unknown to the public. The bill, by disqualifying such background information from prior art, will encourage communication among members of research teams, and patenting, and consequently public dissemination, of the results of "team research."

Id.; see *Patent Law Improvements Act: Hearing on S. 1535 and S. 1841 Before the Subcomm. on Patents, Copyrights, and Trademarks of the Senate Comm. on the Judiciary*, *supra* note 70.

113. See *Cooperative Research and Technology Enhancement Act of 2003 Hearing*, *supra* note 14 and *Patent Law and Non-profit Research Collaboration Hearing* (2002), *supra* note 102.

114. The Bayh-Dole Act allows universities to retain ownership of inventions resulting from federally funded research. *Cooperative Research and Technology Enhancement Act of 2003 Hearing*, *supra* note 14, at 6 (prepared statement by E. Jonathan Soderstrom, Ph.D.). In addition, the universities manage the licensing of patents for commercial product development. *Id.* Prior to the Act, the government owned the inventions and had responsibility for licensing them. Since the Act, numerous pharmaceutical and medical products, environmentally friendlier manufacturing technologies, and inventions improving public safety have resulted from the transfer of federally funded research from universities to the business community, and then to the consumers. *Id.* The Bayh-Dole Act, however, requires universities to obtain permission from the federal agency that funds their research before transferring any patent rights. Act of Dec. 12, 1980, Pub. L. No. 96-517, 94 Stat. 3015–28 (codified as amended at 35 U.S.C. §§ 200–211, 301–307).

115. See generally Dreyfuss, *supra* note 13, at 1161 (discussing problems posed in collaborative research).

116. See *supra* notes 67 and 70. Congress wanted to encourage open communication among members of research teams. In 1984, Congress was faced with the problem of research teams in a corporation. Now, collaborative research with universities and private companies is arguably just as important as inter-company research was in 1984.

117. See *Cooperative Research and Technology Enhancement Act of 2003 Hearing*, *supra* note 14, at 8 (prepared statement of Jon Soderstrom, Ph.D.); see also *id.* at 36 (statement of Jeffrey Paul Kushan).

In my view, the Federal Circuit in *OddzOn* correctly construed § 103(c), despite the

Thus, Congress must step in and clarify the statute to correspond with legislative intent.¹¹⁸

The rationale behind the 1984 amendments was that any technological information brought into a research team comprised of employees of the same company should not be considered prior art for a section 103 analysis.¹¹⁹ Congress wanted researchers, when working in a team setting, to bring their knowledge and information to the table in order to increase dissemination of knowledge and further innovation.¹²⁰

The same reasoning is applied to a research team composed of individuals from various industries and companies. The goal of the research team is to combine knowledge and information. Characterizing information that one participant voluntarily brought to the team as prior art for the later patented invention stifles innovation by discouraging participants from bringing information to the team.¹²¹

inconsistency of its substantive effect with the historical function and purpose of § 102(f). I believe it would be unlikely that the Federal Circuit would reach a different conclusion regarding the role of § 102(f) "information" in an obviousness determination if similar facts were presented to it today.

Id.

118. However, the obvious question to ask at this point is: How big of a problem is this really? On the whole, universities are known for over-patenting, not under-patenting. They are able to easily determine inventions and quickly protect them. Scientists are well aware of what has been invented in their field and understand the importance of filing for patent protection. If an inventor knows of a pending application that may serve as prior art, the inventor can file a patent application for the subsequent invention as a continuation or a continuation-in-part application, thus receiving the priority date of the prior application and eliminating it as prior art. Also, inventors can make use of the provisional application and disclose an invention as soon as possible after conception. The inventor has up to one year to file a patent application, and that application will carry the filing date of the provisional application as its effective date. Also, as previously discussed, universities do not want to hold joint inventorship because of all the hassles. Thus, in collaborative research, a great deal of effort is put into deciding how to break the rights apart. As a result, before any legislation is passed, the need for the legislation must be undoubtedly proven.

119. *Cooperative Research and Technology Enhancement Act of 2003 Hearing, supra* note 14, at 1 (statement of the Honorable Lamar Smith, Chairman, Subcommittee on Courts, the Internet and Intellectual Property).

The legislative history [of the 1984 amendments] makes clear that Congress intended to discourage individuals from attempting to use non-public information, also known as "secret prior art," to challenge the issuance or validity of a patent where co-inventors voluntarily exchanged confidential information concerning a prior invention developed by one or more of the research partners.

Id.

120. In addition, when employees create an invention, the patent is normally assigned to the company anyway, not to the individual inventors. *See CHISUM, ET AL., supra* note 25, at 488 ("[M]ost employees agree to assign ownership rights in the invention to their employer as part of an express contract.").

121. *See Patent Law and Non-profit Research Collaboration Hearing (2002), supra* note 102, at 14 (statement of Carl E. Gulbrandsen) ("Thus, while the need for collaborative research in the public interest is becoming more and more evident, the *OddzOn* decision exerts a substantial chilling effect

Thus, Congress faces a similar problem today that it faced in 1984. In 1984 Congress amended section 103(c) to exempt members of a research team when they all worked for the same company.¹²² In order to find the best solution, the similar problem created today must be completely scrutinized.

The “*Oddzon* problem” occurs when: (1) there is no obligation for common ownership or assignment before an invention is made; (2) one party in the research team conveys information that, when combined with other prior art, renders the invention obvious; and (3) the party conveying that information is not part of the inventive entity named in the application.¹²³ The difficulties lie in the first and third criteria of the *OddzOn* problem.

The first criterion requires a situation with no obligation for common ownership or assignment before the time of invention. Researchers who enter into a defined and structured research collaboration, but who do not immediately transfer their rights¹²⁴ to a single entity, can create obstacles to obtaining or enforcing a patent on an invention that arises from the collaboration.¹²⁵ If there is common ownership or assignment, the safe-

on collaborative efforts among universities, the private sector and the government.”).

122. However, a similar clause exempting “collaborative research projects” is not the solution today. This was proposed in 2002, but several problems surfaced. *See Patent Law and Non-profit Research Collaboration Hearing* (2002), *supra* note 102, at 22–25 (statement by Jon D. Grossman). Among the hesitations voiced was the difficulty that such a fact finding procedure would have on the PTO. Determining whether members all work in the same company is much easier than figuring out whether a collaborative research project existed, when it was formed, and who it included. Such an amendment will impose a burden on the PTO. A new factor must be investigated and proved—the collaboration. Patent examiners will have to judge whether the burden of proving a collaboration has been met. This requires education in contract law and the rules of evidence, two areas in which patent examiners do not always have expertise. The amendment does not just reach universities; it also applies to private companies. The amendment may create a loophole for private companies engaged in collaborative research by over extending protection to the point of creating an anticompetitive effect. Large companies, already obtaining a steady stream of patents, may set up a joint research agreement and thus be afforded greater protection by the amendment and decreased competition between each other. Smaller companies would be hurt. Small companies would also be hurt with respect to the university research. Often companies fund universities with strings attached, such as first choice on any inventions that come out of the research. With the amendment, small businesses may be squeezed out of the collaborative arrangements with universities, thus decreasing competition.

123. *Cooperative Research and Technology Enhancement Act of 2003 Hearing*, *supra* note 14, at 36 (statement of Jeffrey Paul Kushan).

124. The transferring of rights relates to both future inventions and also background technology on which the collaboration is based.

125. *See Cooperative Research and Technology Enhancement Act of 2003 Hearing*, *supra* note 14, at 9 (statement of E. Jonathan Soderstrom, Ph.D.).

The information exchanged under the collaboration does not have to be publicly disclosed or commonly known [to serve to invalidate the patent]. Instead, all that is required is that the collaborators exchange the information without first designating common ownership of the information or of any invention that may arise from the collaboration.

harbor provision of section 103(c) is invoked. However, this may often not be the case for universities involved in collaborative research projects.

Universities must be protected.¹²⁶ The *OddzOn* decision hit universities harder than it impacted private companies because private companies have ways of maneuvering around section 103 by transferring patent rights.¹²⁷ A federally funded university may not be able to transfer its rights to the company.¹²⁸ If the university has federal funding, it must first receive the permission of the federal agency to transfer its rights to the company.¹²⁹ This could be problematic if the university does not yet know exactly what it will be inventing. In addition, there is a public concern that, in effect, society will be paying for the research of a private company. And finally, there are many cultural differences between academic science and industrial science, which lead to differences in approaches to both research and legal issues.¹³⁰

Id.

126. See *supra* Part II.G. A strong need exists for consolidating patent rights to a single owner. If both the university and the company are named as inventors, each can fully exploit the invention. The incidents of joint ownership are codified in 35 U.S.C. § 262:

In the absence of any agreement to the contrary, each of the joint owners of a patent may make, use, offer to sell, or sell the patented invention within the United States, or import the patented invention into the United States, without the consent of and without accounting to the other owners.

35 U.S.C. § 262 (2000). If the two inventors, companies or industries do not agree, the relationship may become messy and cumbersome. Also, as a joint inventor, the university must participate in any lawsuits over relating to the patent. See 8 CHISUM ON PATENTS, *supra* note 40, § 21.03[3][d], at 548. Thus, there is a strong need to consolidate an invention to a single owner. However, with the current state of the law, this must be done early in the research before the invention is conceived, otherwise conversations sharing independent research to be used in the collaboration between the inventors will be considered “prior art” and may render the patent invalid.

127. Janet Reed lists four ways private collaborations may be able to maneuver around the *OddzOn* problem. See *Patent Law and Non-profit Research Collaboration Hearing* (2002), *supra* note 102, at 39–42 (prepared statement of Janet E. Reed). Section 103(c) provides an exemption and various structural mechanisms that can be used by private companies to fall into the exception. First, one private employer can assign its rights to the other private employer. This is probably not an attractive solution for many companies. Second, the collaborating entities can create a shell company or a joint venture to which they can both assign their rights. Third, the individual researchers can each simultaneously assign their patent rights to both entities. Finally, the companies can use contracts to manipulate the scope of the assignment. *Id.* at 40.

128. It is often difficult to determine the likelihood of commercial success of a particular invention or its downstream uses. For this reason, it is unlikely that a company is willing to transfer all of its rights to a university and thus risk losing out on a very profitable invention.

129. Under the Bayh-Dole Act, if an invention is made in whole, or in part, with federal funds, universities may not freely transfer rights to any commercial entity. Act of Dec. 12, 1980, Pub. L. No. 96-517, 94 Stat. 3015–28 (codified as amended at 35 USC §§ 200–211, 301–307); see *supra* note 114.

130. Differences exist in the rewards system: in academia, publication is the primary award; in industry, monetary rewards are the primary incentives. There are differences in the goals: in academia, rewards include renown amongst peers and achievement of tenure (financial reward is also important, but is subservient to or co-existent with, primary goals); in industry, the primary goal is financial

The proposed legislation will remedy the first part of the *OddzOn* problem by allowing a university more time to assign its rights. The amendment introduces the change in the effective date of the invention. Not only will this help increase the certainty in patent law by providing an objective standard,¹³¹ but it will also help potential patent applicants by providing more time for members of a collaborative team to assess the value of the invention before having to create any special ownership arrangements.¹³² While a group of inventors may conceive an invention at point A, they may not file until point B due to decisions on who will file and where rights will be assigned. When A is the effective date, there is a duty to assign rights at the time of the invention. If rights were not assigned by the time the invention was made, prior art problems may perhaps render the invention obvious due to information shared by the various team members. With appropriate legislation, point B becomes the effective date, giving the inventors time between the conception of the invention and public disclosure to assign the rights and sort out legal issues.

The third criterion of the *OddzOn* problem requires that a party who contributed information towards the invention is not named as an inventor. This may readily be remedied by naming everyone who participated in the research as an inventor.¹³³ However, this may not be as easy in the very open research environments now becoming standard in developing

reward (esteem among peers is also important, but is usually secondary to the bottom line of the company). Communication practices differ: in academia, individuals are generally very open with colleagues in academia and industries around the world and frequently have ties with other institutions from sabbaticals spent at other universities or commercial enterprises, visiting professor or research scholar, or consultant; in industry, individuals are necessarily much more guarded with colleagues in other commercial enterprises and seldom have significant ties to other enterprise organizations. There are also differences regarding legal issues: in academia, there are some affirmative duties to protect intellectual property (from the Bayh-Dole Act and industry sponsored research agreements), there is sometimes a lack of sophistication in business and legal matters, and the patent system is often congruent with publication for goals of disclosure; in industry, there are very strong incentives and duties to protect the employer's intellectual property, there is a reliance on and cooperation with legal counsel and business advisors, and the patent system is often congruent with business goals. Lamming, *supra* note 15.

131. See *supra* note 56.

132. *Cooperative Research and Technology Enhancement Act of 2003 Hearing, supra* note 14, at 38 (statement by Jeffery Paul Kushan).

133. Inventive entities are described in 35 U.S.C. § 166, which reads:

When an invention is made by two or more persons jointly, they shall apply for patent jointly and each make the required oath Inventors may apply for a patent jointly even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent.

35 U.S.C § 116 (2000).

fields.¹³⁴ Ideas come from everywhere and the fundamental goal behind the Patent Law system is to encourage the use of ideas and information to push forward innovation. However, this comes dangerously close to “deriving” the invention or stealing someone’s ideas. Thus, careful consideration is due.

The third criterion of the *OddzOn* problem is less straightforward, and the proposed amendment is not obviously beneficial. The proposed amendment has many arguments in its defense. First, H.R. 2391 proposes to remove section 102(f) from prior art contention in a section 103 obviousness determination. Prior art has long been considered only public knowledge. Private communications are not public knowledge and arguably should not be used to invalidate a patent. This principle applies to all industries, whether private or public. The proposed legislation codifies the general understanding of the prior art purpose that preceded the *OddzOn* decision.

In addition, the proposed amendment encourages the underlying policy of patent law: increasing dissemination of knowledge and disclosure of information. Without the amendment, in certain situations, information that researcher A shares may later be used against A in attempting to obtain a patent. Thus, researchers may not be as forthcoming with their technology or ideas in a research team setting for fear of later obviousness rejections on the future invention. In addition, the amendment will increase publications. If researchers and inventors do not make information public, another can use the idea or information obtained from private communications, make a minor variation, and get a patent on the variation without any prior art hurdles. The amendment will also encourage discourse between inventors and their colleagues in future work. Again, this encourages the use of information and spurs innovation.

However, there are strong arguments against removing section 102(f) from the prior art category. The policy behind section 102(f) is the derivation principle. The patentee must have invented the invention herself. If she did not invent any part of the invention but rather derived it from someone else, she is not entitled to the patent. And, while the information may not be public in the sense that everyone has access to it, the inventor did have access to it. Thus, in determining if the invention was obvious or not, all the information available to the inventor must be examined.

134. See *supra* note 13.

There is a sense of “unfairness” when one participant brings information to a research team that is comprised of individuals in other industries or businesses, and then a later invention is patented by the other members of the team. This scenario will stifle innovation. Members of the team are going to be secretive because it is easier to misappropriate information from other members of the team with no prior art/obviousness hurdle.

In addition, the amendment may have some anticompetitive effects. If a professor at a university shared information during collaboration with a researcher in a company, the company could easily take the information and patent the invention along with many obvious alterations because the shared information would not be prior art. The university then could not receive a patent on the original invention due to obviousness-type double patenting.¹³⁵

IV. PROPOSAL

University research is vital to the success of the United States as a world leader in science and scientific advances.¹³⁶ While legal alternatives exist, such as provisional applications and continuations, situations may still arise where universities or their private collaborators are left unprotected. The mere possibility of this is enough for companies and universities to proceed with caution. However, whether H.R. 2391 correctly addresses the issues involved is not clear. The allowance of extra time to assign patent rights is a recommended means for helping universities in collaborative efforts. Removing section 102(f) from prior art consideration in an obviousness determination, however, is a drastic change in the patent laws, and has the possibility of encouraging misappropriation, and thus is not recommended.

Specifically relating to the *OddzOn* problem, H.R. 2391 addresses the first and third criteria.¹³⁷ The proposed legislation, H.R. 2391, addresses the concerns of universities from the *OddzOn* holding and goes further to encourage collaborative research. As proposed by the bill, section 102(f) is never considered to be prior art for an obviousness determination. Information that could qualify only under section 102(f) could not be used

135. Double patenting is beyond the scope of this Note, but the proposed amendment could possibly have strong effects on the double patenting system.

136. See *supra* note 108.

137. See *supra* Part III.

in combination with prior art to render an invention obvious under section 103.¹³⁸

In addition, the bill also changes the critical date in section 103(c).¹³⁹ This date refers to when there is a common duty to assign. Since the earliest filing date usually occurs after the time of the invention, this duty to assign now occurs later in time. Thus, the inventors are allotted time after the invention to assign rights.

This second change helps collaborations involving universities by allowing more time, after the invention has been conceived, to get permission from federal agencies to assign rights. This change in the effective date definition will also serve as a bright-line form of measurement, removing the burden of determining the time of invention.

However, with the first part of the proposed amendment, it will be much easier to misappropriate the invention of another. There are two proposed solutions to this. First, a researcher could file a patent application on her idea before communicating it to someone else. But this is not efficient. On the other hand, an inventor could file a section 102(g)(1) interference if she feels her idea has been misappropriated.¹⁴⁰ However, without the initial defense of using section 102(f) as prior art in the patent application process, the increased use of the interference will increase transactional costs. The amendment may also encourage patenting of minor variations of publicly disclosed inventions, such as inventions disclosed at conferences. In addition, the proposed amendment may decrease incentives to publish because the publication will serve as prior art to render a patent obvious, whereas private communications would not. If inventions and information are kept secret or just not published, it will not serve as prior art. The inventor at least has the option to gamble with the chance someone else invents the invention first. This flies in the face of the underlying policy of the patent law system.

138. Section 102(f) is amended by inserting, after “patented,” the following: “except that subject matter under this subsection shall not be considered prior art or as evidence of obviousness under section 103 of this title.” See H.R. 2391, *supra* note 100 and accompanying text. Thus, the bill changes the decision by the Federal Circuit in *OddzOn*, but will only change it prospectively. The change will only be effective after the date of the amendment. This change still leaves intact jurisprudence that serves to prevent derivation of inventions by using any public prior art to render a patent obvious under section 103 and using section 102(f) for novelty purposes. For example, if inventor A conveys information to inventor B concerning an invention, inventor B will not be able to obtain a patent on the same invention.

139. Section 103(c) is amended to include “at the time of the earliest filing date.” See H.R. 2391, *supra* note 100 and accompanying text. The critical date is changed from the date the invention was made to the date a patent application is filed.

140. However, this would not work if the information was obtained out of the country. See 35 U.S.C. § 102(g)(1) (2000).

V. CONCLUSION

Collaboration must be encouraged to move science along at a fast pace. The difficulties involved with the university transfer of patent rights demands legislative action. The Patent Act needs to allow university inventors in a collaboration more time to determine the importance of the invention without communications during that time serving as prior art. Giving universities more time to assign patent rights will allow collaborations to succeed. However, entirely removing section 102(f) from prior art consideration in an obviousness determination will leave an open arena for misappropriation of inventions. Therefore, H.R. 2391, as currently drafted, is too drastic of a change in the patent laws.

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