BEST PRACTICES FOR DRAFTING UNIVERSITY TECHNOLOGY ASSIGNMENT AGREEMENTS AFTER *FILMTEC*, *STANFORD V. ROCHE*, AND PATENT REFORM

Parker Tresemer†

Abstract

Since the end of World War II, federally funded universities and private companies have been an integral part of continued American innovation and technological production. However, like most rational economic actors, universities and private companies are only willing to invest in federally funded technologies if they are guaranteed some sort of exclusive return on their investment. By granting federal contractors exclusive patent rights to their employees' federally funded inventions, the Bayh-Dole Act provided the necessary incentives for private sector investment in federally funded technologies.

However, case law subsequent to Bayh-Dole's enactment has significantly undermined the system of incentives Congress intended to establish for federal contractors and private industry. FilmTec Corp. v. Allied-Signal Inc. established that prior to actual invention, federal contractors could obtain at most equitable title to their employee's future inventions. Pre-invention assignment agreements were, therefore, put at risk of divestiture by inconsistent assignments. Stanford v. Roche further established that the Bayh-Dole Act does not automatically grant federal contractors title to their employee's inventions. Instead, contractors are required to obtain properly drafted assignment agreements. In short, no assignment agreement, no patent rights.

Although much remains unclear in the wake of FilmTec and Stanford v. Roche, the need for airtight employee assignment agreements has become glaringly apparent. Discerning the particular requirements under Bayh-Dole,

---

† Managing Editor, UCLA Law Review, Volume 59; J.D., UCLA School of Law, 2012; B.S., University of Virginia, 2006. I would first and foremost like to thank JoAnna Esty for sharing with me her expertise and experience in practical intellectual property counseling. Thanks also to Shirin Behrooz, Douglas Lichtman, Brandon Sanders, Charles Snyder, Charlie Sommers, Cheryl Tresemer, and Kirk Tresemer for encouragement and discussion. I also owe special thanks to the editors of the University of Illinois Journal of Law, Technology & Policy for their valuable comments.

recent case law, and U.S. patent law can be trying for even sophisticated contract drafters. By providing a roadmap to draft strong assignment agreements in compliance with recent case law, this comment enables universities to protect their exclusive patent rights.

TABLE OF CONTENTS

I. Introduction 349
II. American Domestic Policy Before the Bayh-Dole Act 351
III. The Bayh-Dole Act 355
A. Tier 1: Contractor Rights and Obligations 356
1. General Obligations Imposed on Federal Contractors 356
2. Obligations Imposed Only on Nonprofit Organizations 357
B. Tier 2: Government Rights 358
1. Ownership Rights 358
2. March-In Rights 359
C. Tier 3: Inventor Rights 360
1. Ownership Rights 360
2. Rights to Royalties 360
IV. *FilmTec Corp. v. Allied-Signal, Inc.* 360
V. *Stanford v. Roche* 364
VI. Patent Reform 368
A. Assignee Filing Before September 16, 2012 369
B. Assignee Filing After September 16, 2012 369
VII. Pre-Invention Employee & Independent Visitor Assignment Agreements 370
A. Require Disclosure and Automatic Assignment 372
1. Unequivocally and Automatically Grant Rights 372
a. University Employees and Students 374
b. Visiting Inventors Not Subject To Collaborative Research Agreements 375
2. Create and Disclose a Detailed Record of Developments as They Occur 375
3. Ensure Prompt Application for Patent 376
4. Allow Contractors to Unilaterally File Patent Applications 377
B. Prevent Bona Fide Subsequent Purchasers 378
C. Establish the University as a Bona Fide Subsequent Purchaser 380
1. Establish Consideration 380
a. University Employees and Students 381
b. Visiting Inventors Not Subject to Collaborative Research Agreements 381
2. Establish Lack of Prior Agreements or Obligations to Third Parties 381
D. Submit Confirmatory Assignment To USPTO Immediately 382
VIII. Pre-Invention Assignment Agreements for Visiting Inventors Subject to Collaborative Research Agreements 382
A. Additional Issues In Collaborative Research Agreements 383

B. Require Disclosure and Automatic Assignment to Collaborators 385
1. Unequivocally and Automatically Grant Rights..... 385
2. Create and Disclose a Detailed Record of Developments as They Occur..... 386
3. Ensure Prompt Application for Patents 387
4. Allow Contractors and Employers to Unilaterally File Patent Applications..... 388
IX. Conclusion 389

I. INTRODUCTION

World War II vaulted the United States into the world forefront of innovation and productivity.[1] American policymakers at the time believed that by funding university research and encouraging universities to donate their discoveries to the public domain, policymakers could incentivize private industry to capitalize on the resulting outpour of innovative ideas.[2] However, despite its efforts, United States innovation and production had fallen behind countries like Japan by the end of the 1960s.[3] The global market following World War II was much more competitive than Congress had anticipated,[4] and American companies proved unwilling to invest in unproven technologies without some guaranteed return on their investment.[5] American industry refused to develop basic technologies into commercial products without somehow limiting competition in the same technological space.[6] In short, companies wanted patent rights. Senators Robert Dole (R., KS) and Birch Bayh (D., IN) recognized the realities of the post-World War II market.[7] The senators knew that private industry existed to make a profit, that the cost of developing basic technologies to the point of profitability often became infeasible in a crowded marketplace, and that without private industry, American innovation would continue to stagnate.[8]

In 1980, Congress passed the Bayh-Dole Act to solve that problem. As

1. Ashley J. Stevens, *The Enactment of Bayh-Dole*, 29 J. TECH. TRANSFER 93, 93 (2004).

2. Steve L. Bertha, *Intellectual Property Activities in U.S. Research Universities*, 36 IDEA 513, 514 (1996).

3. *See* Stevens, *supra* note 1, at 93 (discussing that Congress seeks ways to particularly address the Japanese economic threat); *see also The Bayh-Dole Act, a Review of Patent Issues in Federally Funded Research: Hearing on Pub. L. 96-517 Before the Subcomm. on Patents, Copyrights and Trademarks of the Comm. on the Judiciary*, 103d Cong. 12 (1994) [hereinafter *Hearing on Patents, Copyrights and Trademarks*] (statement of Sen. Birch Bayh) (discussing Congressional concern over the United States falling behind in technological innovation).

4. *See* Stevens, *supra* note 1, at 93 (discussing how by the 1970s the United States was falling behind in the global market).

5. *See Hearing on Patents, Copyrights and Trademarks*, *supra* note 3, at 17 (statement of Sen. Robert Dole) (describing how the private sector does not invest in a product if it is not ensured some form of protection to their investment).

6. *Id.*; 124 CONG. REC. 29,122 (1978) (statement of Sen. Birch Bayh).

7. *See generally* 124 CONG. REC. 29,118 (1978) (statement of Sen. Robert Dole) (discussing the reasons for introducing the bill).

8. *Id.*

originally intended, the Bayh-Dole Act created a hierarchical, three-tier system of intellectual property rights to federally funded inventions.[9] First, Congress granted federal contractors, like universities, sole patent rights to their employees' inventions developed in full or in part using federal funds.[10] Second, Congress granted the federal government exclusive rights to those federally funded inventions if the federal contractor chose not to retain title to its employees' inventions or if the federal contractor failed to timely file the necessary patent applications as prescribed in the Act.[11] Third, Congress gave employees the right to acquire title to their inventions only after both their contractor employer and the federal government had declined rights to the inventions.[12] Congress believed that small companies and non-profit organizations were uniquely suited to commercialize the products of federally funded research, and the Bayh-Dole Act created a system of incentives designed to insure that small companies and non-profits would do so.[13] Because the Act automatically granted federal contractors sole rights to inventions developed at their institutions, federal contractors had a built in incentive to produce marketable products that would ultimately benefit the American public.

However, two federal cases, *FilmTec Corp. v. Allied-Signal, Inc*. and *Board of Trustees of the Leland Stanford Junior University v. Roche Molecular Systems*, decided subsequent to Bayh-Dole's enactment, have significantly undermined the system of incentives Congress intended to establish for federal contractors and private industry.[14] In *FilmTec.*, the Federal Circuit drew a distinction between federal contractors' rights to employee inventions before actual invention versus after invention.[15] Despite the Bayh-Dole Act and despite the existence of a valid university assignment agreement, the court in *Filmtec* held that employers could acquire at most equitable title to employee inventions before those inventions were actually created.[16] Therefore, an inventor's assignment to a bona-fide third party purchaser subsequent to the inventor's agreement with the university could void the university's prior agreement and divest the university of any rights to its employees' inventions.[17] Universities without assignment agreements specifically tailored to guard against divestiture by subsequent inconsistent assignment are at risk.

In *Stanford v. Roche*, the Supreme Court held that despite the last thirty years of common practice, the Bayh-Dole Act neither granted federal

9. *See infra* Part III.

10. *See* 35 U.S.C. § 202 (1980) (describing contractor's property rights and employee-inventors' financial rights to federally funded inventions).

11. *Id.*; Standard Patent Rights Clauses, 37 C.F.R. § 401.14(d) (2002).

12. *See* 35 U.S.C. § 203 (1980) (describing the government's "march-in rights" to contractor-owned inventions).

13. *See infra* Part II.

14. *See infra* Parts IV, V. *See generally* Bd. of Trs. of the Leland Stanford Junior Univ. v. Roche Molecular Sys., 131 S. Ct. 2188 (2011); FilmTec Corp. v. Allied-Signal, Inc., 939 F.2d 1568 (Fed. Cir. 1991).

15. *See generally FilmTec*, 939 F.2d at 1568.

16. *Id*. at 1572 (citing Mitchell v. Winslow, 17 F. Cas. 527, 531 (C.C.D. Me. 1843) (No. 9,673)).

17. *See id*. at 1573–74 ("[T]he bona fide purchaser for value cuts off the rights of a prior assignee . . . .").

contractors title to their employee's federally funded inventions nor allowed federal contractors to unilaterally take title to those inventions.[18] The Court held instead that universities, and federal contractors in general, only obtain title to their employee's inventions through effective technology assignment agreements.[19] The automatic protection afforded by the Bayh-Dole Act no longer exists. Not only that, but assignment agreements must now contain very particular language to be effective.[20] Writing "I do hereby assign" instead of "I agree to assign" will make all the difference.[21] Beyond fundamentally undermining the Bayh-Dole Act's structure, the Court's decision in *Stanford v. Roche* creates a drafting trap with significant consequences for the unwary. Properly drafted assignment agreements have become critical to protecting universities' intellectual property rights and to maintaining the system of incentives Congress intended to establish.

This Article dissects the specific requirements for effective assignment agreements and suggests particular provisions university-assignees can use to protect their intellectual property. Part II describes how Congress enacted the Bayh-Dole Act to stimulate American innovation after World War II. Part III summarizes Bayh-Dole's structure as understood prior to recent interpretation by the Supreme Court. Parts IV and V discuss recent court decisions and the heightened drafting requirements they impose on university assignment agreements. Part VI details Congress's recent patent reform and identifies strategies under which universities can use the new laws to protect their intellectual property. Finally, Parts VII and VIII synthesize recent court holdings and legislation and suggest particular provisions university assignment drafters can use to protect their intellectual property rights to inventions developed by employees or international collaborators.

II. AMERICAN DOMESTIC POLICY BEFORE THE BAYH-DOLE ACT

Partly in response to the success of scientific-military projects conducted in conjunction with U.S. universities during World War II, the United States had become the world leader in technological innovation by the end of the war.[22] In the following years, the Federal Government expanded funding for scientific research at American universities out of a desire to continue to dominate the world market.[23] Academic culture in universities and national

18. *Stanford*, 131 S. Ct. at 2196–98.

19. *Id*. at 2195 (citing United States v. Dubilier Condenser Corp., 289 U.S. 178, 188 (1933)). The Court also took issue with Bayh-Dole's definition of subject inventions as inventions "conceived or first actually reduced to practice" at the university. *Id*. at 2198 (quoting 35 U.S.C. § 201(e) (2006)). The Court disagreed that the Bayh-Dole Act granted universities sole title to employee inventions conceived before the inventor's engagement with the university but reduced to practice while at the university. *Id*.

20. *See id*. at 2199 (holding that "I agree to assign" was insufficient language to grant ownership to inventions, however, "I do hereby assign" can be sufficient to vest ownership).

21. *Id*.

22. *See* Stevens, *supra* note 1, at 93 ("Coming out of World War II, the United States was unchallenged in its political and economic leadership of the free world.").

23. *See* Bertha, *supra* note 2, at 514 ("The expansion of scientific investigation at major research universities occurred in all fields during the past 50 years."). In his July 1945 report to the President, Vannevar Bush, a primary organizer of the Manhattan Project, produced a document entitled "Science, the

laboratories at the time motivated academics to publish their basic research in public scientific journals, and government policymakers funded basic research in the hopes that private industry would develop products based on published technological advancements.[24] That is, policymakers believed that private industry would unilaterally invest in publicly known foundational technologies, commercialize related products, and bolster the United States' position at the forefront of technological innovation.[25]

Congress came to the stark realization in the 1970s, however, that Europe and Japan had taken over America's role as the world leader in innovation.[26] American productivity had stagnated and patents on federally funded technologies had become less and less common.[27] The U.S. Government spent more than $75 billion per year[28] on research and development, but regardless, innovation and commercialization were not succeeding.[29] Numerous groundbreaking discoveries were produced in government funded labs every year, but government policy on intellectual property rights was stifling their success.[30] The government itself was unable to commercialize products based on basic technologies, but it was at the same time unwilling to release rights to those in private industry that could.[31]

The Carter administration, the presidential administration at the time, adhered to the belief that only the Federal Government could own and effectively manage federally funded and patented technologies.[32] Because American tax dollars funded the government's research grants, the administration insisted that only the public, by way of the Federal Government, should own the rights to federally funded inventions.[33] Private companies had no right to federally funded technologies, and granting title or exclusive licenses to private industry would misappropriate tax dollars and support a

---

Endless Frontier," in which he urged the importance of Government-sponsored basic research. *Id*. The Federal Government was further encouraged by the success of the Manhattan Project in developing radar technology. *Id.*

24. *Id*.

25. *Id*. at 514–15.

26. *See Hearing on Patents, Copyrights and Trademarks*, *supra* note 3, at 12–13 (statement of Sen. Birch Bayh) ("Simply put, American efforts at innovation, in which we were once the un-disputed world leader, were stagnating and falling behind those of other nations.").

27. *Id*. at 12. According to one source at the time, U.S. inventions "reached a peak in 1971 and ha[ve] declined steadily since. But the number [of patents] granted to foreign investors has increased steadily since 1963. In 1977, foreigners claimed 35% of all patents issued in the [United States] across a broad range of fields." Bradley Graham, *Something's Happened to Yankee Ingenuity*, WASH. POST, Sept. 3, 1978, at G1.

28. Stevens, *supra* note 1, at 94.

29. *Hearing on Patents, Copyrights and Trademarks*, *supra* note 3, at 12 (statement of Sen. Birch Bayh). In 1978, the Washington Post reported the "[p]roductivity, which is partly a function of technological innovation, has slumped severely. In the [1970s], the rate of growth in U.S. productivity has averaged only half of what it was the previous 20 years. In contrast, productivity growth rates in Europe and Japan have been on the rise." Graham, *supra* note 27, at G1.

30. *See* 124 CONG. REC. 29,118 (1978) (statement of Sen. Robert Dole) ("This bill will not only remove an unfortunate bottleneck in the flow of technology to the public, it will also underscore the need for the public and private sectors to work in partnership on the many problems facing this Nation.").

31. *Id*.

32. Stevens, *supra* note 1, at 94.

33. Rebecca S. Eisenberg, *Public Research and Private Development: Patents and Technology Transfer in Government-Sponsored Research*, 82 VA. L. REV. 1663, 1673–74 (1996).

private monopoly to the taxpayers' detriment.[34] Taxpayers would be required to pay once for research and development and again for products at monopoly prices.[35]

While policymakers' efforts were commendable, these efforts did not properly consider the re-entry of developing countries, such as Japan, into the post-World War II emerging global market.[36] This new global market was much more competitive than its predecessor, and by the time Congress had even become aware of the problem, countries like Japan had already subsumed many mature and emerging U.S. industries.[37] While the Federal Government's plan to spur basic scientific research had succeeded, the requisite second step in the process fell flat.[38] Industry was unwilling to invest in commercializing federally funded, basic technologies without exclusive rights to the technologies.[39] Such strong, exclusive rights, however, were not available.[40] Academic publishing dedicated new technologies to the public domain and the government used what few patents it owned to ensure federally funded technologies were made public.[41]

Further, the Federal Government offered only non-exclusive licenses on federally owned and managed technologies.[42] Various federal agencies managed these non-exclusive licenses with varying degrees of complex bureaucratic procedures and regulations.[43] The more than twenty different policies used by various federal funding agencies often conflicted with one another, and no one policy governing intellectual property rights to federal funded inventions took precedence.[44] Research universities and small

34. 96 CONG. REC. S4099, 4123 (daily ed. Apr. 23, 1980) (statement of Sen. Russell B. Long).

35. *Id*.

36. *See* Stevens, *supra* note 1, at 93 (describing the sources of competition to American innovation).

37. *Id*.

38. Jay P. Kesan, *Transferring Innovation*, 77 FORDHAM L. REV. 2169, 2175 (2009).

39. *See id*. (explaining the purpose of Bayh-Dole).

40. 95 CONG. REC. S29118 (1978) (statement of Sen. Robert Dole).

41. *Id*. For example, the University of Wisconsin organized the Wisconsin Alumni Research Foundation (WARF) in 1925 to manage and market patents based on University of Wisconsin faculty research discoveries. E. DAVID CRONON & JOHN W. JENKINS, THE UNIVERSITY OF WISCONSIN VOLUME IV, A HISTORY, 1945–1971 RENEWAL TO REVOLUTION 239–41 (1999). In the mid-1960s, WARF patented the anti-cancer drugs 5-fluorouracil (5-FU) and 5–FUDR, which were developed at the University. *Id*. After 5-FUDR was proven to be particularly effective at fighting some types of cancer, WARF granted an exclusive license on the drug to a private pharmaceutical company, Hoffman-LaRoche. *Id*. However, because the United States Public Health Service (PHS) had partially supported the drug's development through federal grants to University of Wisconsin researchers, PHS objected to the exclusive license and sued WARF alleging violations of federal antitrust statutes and restraining trade. *Id*. PHS argued that it was entitled to at least partial ownership of the invention, and after PHS threatened to withdraw funding from the University of Wisconsin, WARF agreed to assign a partial interest in the 5-FUDR patents to PHS. *Id*. Subsequently, PHS refused to grant exclusive licenses on the technology and, for all intents and purposes, placed the technology in the public domain. *Id*.

42. *Hearing on Patents, Copyrights and Trademarks*, *supra* note 3, at 13 (statement of Sen. Birch Bayh). Policymakers at the time believed that any economic or commercial rewards derived from federally funded research and development should inure to the Federal Government on behalf of the taxpayers. *Id.* Policymakers further believed that granting exclusive rights to non-government entities, including universities and small companies, would improperly divert financial benefit from taxpayers to organizations concerned only with personal profit. *Id.*; Bertha, *supra* note 2, at 525–26.

43. Bertha, *supra* note 2, at 525–26.

44. Joseph P. Allen, *A Long, Hard Journey: From Bayh-Dole to the Federal Technology Transfer Act*, TOMORROW'S TECH. TRANSFER, Winter 2009, at 1. Under many of these policies, universities and federal

companies were largely unable to navigate the regulatory requirements, and less than 5% of the 28,000 inventions for which the Federal Government held title prior to 1980 were ever licensed.[45] Bureaucratic red tape made commercialization all but impossible.[46]

Government policymakers had not fully considered the technology monetization process. Although research and development was often prohibitively expensive,[47] the costs of fully commercializing a new product were often three times the initial cost required for research and development alone.[48] Commercialization required significant investment in non-recurring engineering, design optimization, manufacturing, distribution, and regulatory approval. Total commercialization costs routinely exceeded the funds contributed by the Federal Government by at least ten to one, and companies needed some sort of guarantee that they would be able to recoup the difference.[49] However, without exclusive rights to a technology, companies were simply unable to recover these costs.[50] Competitors could easily duplicate a company's products without investing any of the up-front capital required for commercialization, which allowed competitors to enter the market at price points the original companies were unable to match.[51] Accordingly, without exclusive intellectual property rights, companies were unwilling to invest the capital required to develop early-stage technologies into commercial products.[52]

Senators Robert Dole (R., KS) and Birch Bayh (D., IN) recognized the realities of research and commercialization in the United States and urged a divergent approach.[53] The Senators believed that private industry and the free market provided financial incentives to commercialize federally funded technologies.[54] By vesting patent rights in the Federal Government, policymakers had eliminated these incentives and short-circuited any chance of successful commercialization.[55] The Senators suggested that government

---

contractors whose inventions were requisitioned by the Federal Government could petition for patent rights or licenses, but these procedures often took between eighteen and twenty-four months and did not guarantee the government would comply. *Id*. at 21–22; Kesan, *supra* note 38, at 2175.

45. *Hearing on Patents, Copyrights and Trademarks*, *supra* note 3, at 17 (statement of Sen. Robert Dole); *Id*. at 13 (statement of Sen. Birch Bayh).

46. Allen, *supra* note 44, at 22; Bertha, *supra* note 2, at 515.

47. *Hearing on Patents, Copyrights and Trademarks*, *supra* note 3, at 17 (statement of Sen. Robert Dole).

48. *Id*.

49. 124 CONG. REC. 29,118 (1978).

50. *Hearing on Patents, Copyrights and Trademarks*, *supra* note 3, at 17 (statement of Sen. Robert Dole).

51. *See id*. (explaining that fewer than 4% of government-owned inventions were commercialized prior to 1980 because private companies did not have the security of exclusive rights to make commercialization of these inventions profitable).

52. *Id*.

53. *See generally* 124 CONG. REC. 29,118 (1978) (criticizing the current policy, which discouraged university inventions from reaching the public due to the lack of private sector incentive).

54. *Id*.

55. *Id*. For example, in a 1994 report to the Senate Subcommittee on Patents, Copyrights and Trademarks, Senator Bayh stated that the Carter Administration's "policy was not only wasting tax dollars, but it had a very negative impact on U.S. technological innovations and undercut American competitiveness." *Hearing on Patents, Copyrights and Trademarks*, *supra* note 3, at 13 (statement of Sen. Birch Bayh).

stewardship of intellectual property rights was interfering more with commercialization than fostering it.[56] By granting private companies a financial interest in federally funded technologies, i.e., the opportunity to financially exploit exclusive patent rights, the Senators hoped to provide strong enough incentives for private companies to invest in basic federally funded research.[57]

III. THE BAYH-DOLE ACT

By enacting the Bayh-Dole Act in 1980, Congress intended to incentivize commercialization of federally funded technologies by private industry.[58] Congress believed that by commercializing the then undeveloped products of federally funded research, private companies and nonprofit institutions would help reverse America's declining productivity and innovation.[59] The Federal Government was so bogged down in divergent policy and bureaucracy that it was unable to commercialize the technologies to which it retained title.[60] Individual inventors were also ill-equipped to navigate the product lifecycle from conception, through research, and ultimately to commercialization.[61] The process was simply too complex and too expensive.[62]

Instead, Congress determined that research institutions and small businesses ("federal contractors") were best suited to usher government-funded technologies through the commercialization process. Such contractors were generally on the leading edge of innovation crucial to America's industrial success.[63] "Of the 319 major innovations" in America between 1953 and 1973, companies with less than one hundred employees developed 24% and companies with less than one thousand employees produced another 24%.[64] Congress knew that small and nonprofit federal contractors were uniquely suited to help pull the United States out of its technological funk.[65] Congress intended to vest title to federally funded technologies in federal contractors because developing, commercializing, and distributing innovative products to the public was essential to America's continued industrial prosperity and because federal contractors were best suited to the task.[66]

Similarly, in a 1978 floor debate regarding the Bayh-Dole Act, Senator Dole stated that the Carter Administration's "attitude will not encourage startups of new small businesses, nor will it enhance economic growth, nor increase employment, nor trade competitiveness, nor solve our energy shortage." 124 CONG. REC. 29,118 (1980).

56. 126 CONG. REC. S4124 (daily ed. Apr. 23, 1980) (statement of Sen. Robert Dole).

57. Stevens, *supra* note 1, at 94–95.

58. *See supra* Part II.

59. *See supra* Part II.

60. *See supra* Part II.

61. *See supra* Part II.

62. *See supra* Part II.

63. S. REP. NO. 96-480, at 1 (1979) ("Small businesses . . . have compiled a very impressive record in technological innovation . . . .").

64. *Id*. at 24.

65. *See supra* Part II.

66. Bd. of Trs. of the Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc., 131 S. Ct. 2188, 2201 (2011) (Breyer, J., dissenting).

The Bayh-Dole Act governs federal-funding agreements and the patentable products of all research conducted under such agreements regardless of the amount of funding received.[67] Funding agreements under Bayh-Dole include any contract or grant between any federal agency and any contractor for research plus any assignments or subcontracts between federal contractors and third parties.[68]

Until the Supreme Court's decision in *Stanford v. Roche*,[69] the Act established a hierarchical, three-tier system of rights to inventions resulting from federal funding.[70] First, small businesses and nonprofit organizations were granted priority to the products of federally funded research.[71] Second, the Act granted the federal government the right to acquire sole title to the inventions only if the relevant federal contractor chose not to retain its claim.[72] Third, individual employee-inventors working for the federal contractor could acquire title to inventions only after both the contractor and the federal government had relinquished their rights to the technologies.[73]

A. Tier 1: Contractor Rights and Obligations

The Bayh-Dole Act as originally understood granted federal contractors, e.g., nonprofit organizations and small business firms, full title to federally funded inventions developed at their institutions.[74] The Act granted federal contractors exclusive rights to any inventions conceived or first actually reduced to practice under a funding agreement with a federal agency ("subject inventions").[75] In addition, the Act required that each federal funding agreement impose a series of obligations on the employer contractor.[76]

1. General Obligations Imposed on Federal Contractors

Under the Bayh-Dole Act, any written funding agreement between any

67. 35 U.S.C. § 201(b) (2006).

68. *Id*. For clarity, the Act's full definition of funding agreement is reproduced here. "The term 'funding agreement' means any contract, grant, or cooperative agreement entered into between any federal agency, other than the Tennessee Valley Authority, and any contractor for the performance of experimental, developmental, or research work funded in whole or in part by the Federal Government. Such term includes any assignment, substitution of parties, or subcontract of any type entered into for the performance of experimental, developmental, or research work under a funding agreement as herein defined." *Id*.

69. *See infra* Part V (discussing the Supreme Court's interpretation of the Bayh-Dole Act).

70. See Fenn v. Yale Univ., 393 F. Supp. 2d 133, 137 (D. Conn. 2004) for a district court's interpretation of rights to inventions resulting from federal funding under the Bayh-Dole Act.

71. *See* 35 U.S.C. § 202 (2006) (describing contractor's property rights and employee-inventors' financial rights to federally funded inventions).

72. *See id*. (describing contractor's property rights and employee-inventors' financial rights to federally funded inventions).

73. *See id*. § 203 (describing the government's "march-in rights" to contractor owned inventions).

74. *Id*. § 202(a) ("Each nonprofit organization or small business firm may, within a reasonable time after disclosure as required by paragraph (c)(1) of this section, elect to retain title to a subject invention . . . .").

75. *Id*. § 201(e) ("The term 'subject invention' means any invention of the contractor conceived or first actually reduced to practice in the performance of work under a funding agreement . . . .").

76. *Id*. § 202(c) ("Each funding agreement with a small business firm or non-profit organization shall contain appropriate provisions to effectuate" the contractor's and the government's rights to the subject invention.).

contractor and its federal agency had to impose the following obligations on the contractor:[77]

1. The contractor must disclose to the federal agency party to the funding agreement each invention to which the contractor intends to retain title.[78]
2. Within a reasonable time, the contractor must declare its intent to retain title to the disclosed invention.[79]
3. The contractor must file a patent application on the disclosed invention within a reasonable time.[80]
4. The contractor must grant the federal agency a non-exclusive, nontransferable, irrevocable, paid-up license to practice the invention worldwide.[81]
5. The contractor must make and report on efforts to use and commercialize the invention.[82]
6. The contractor must declare in the patent specification that the invention was made with government funding and that the government has certain rights to the invention.[83]

2. Obligations Imposed Only on Nonprofit Organizations

The Bayh-Dole Act also required funding agreements between federal agencies and nonprofit organizations, including universities, to impose a few additional obligations on those nonprofit organizations:[84]

1. The nonprofit cannot assign rights to the invention without the

77. *Id*. §§ 202(c)(1)–(6) ("Each funding agreement with a small business firm or non-profit organization shall contain appropriate provisions to effectuate" the contractor's and the government's rights to the subject invention.).

78. *Id*. § 202(c)(1) (requiring that "the contractor disclose each subject invention to the Federal agency within a reasonable time after it becomes known . . . and that the Federal Government may receive title to any subject invention not disclosed to it within such time").

79. *Id*. § 202(c)(2) (requiring that the contractor make an election to retain title to any subject invention within a reasonable time after disclosure and that the "Federal Government may receive title to any subject invention in which the contractor does not elect to retain rights or fails to elect rights within such times").

80. *Id*. § 202(c)(3) (requiring that a contractor electing rights file patent applications within reasonable times and "that the Federal Government may receive title to any subject inventions in the United States or other countries in which the contractor has not filed patent applications on the subject invention within such times").

81. *Id*. § 202(c)(4) ("With respect to any invention in which the contractor elects rights, the Federal agency shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any subject invention throughout the world, and may, if provided in the funding agreement, have additional rights to sublicense any foreign government or international organization pursuant to any existing or future treaty or agreement.").

82. *Id*. § 202(c)(5) ("The right of the Federal agency to require periodic reporting on the utilization or efforts at obtaining utilization that are being made by the contractor or his licensees or assignees: *Provided*, That any such information . . . shall be treated by the Federal agency as commercial and financial information obtained from a person and privileged and confidential and not subject to disclosure under section 552 of title 5 [of the United States Code].").

83. *Id*. § 202(c)(6) ("An obligation on the part of the contractor, in the event a United States patent application is filed by or on its behalf or by any assignee of the contractor, to include within the specification of such application and any patent issuing thereon, a statement specifying that the invention was made with Government support and that the Government has certain rights in the invention.").

84. *Id*. § 202(c)(7).

funding federal agency's approval unless the assignment is to an organization uninvolved in the manufacture or sale of similar or competing technologies.[85]

2. Barring special agency approval, the nonprofit is prohibited from granting an exclusive license to the invention to other than a small business firm in excess of the shorter of five years from the invention's first commercial sale or eight years from the date the license is granted.[86]
3. The nonprofit employer must share royalties with the employee-inventor.[87]
4. The nonprofit must use the balance of any royalties earned from the subject invention, after payment of expenses relating to the invention (including payment to inventors), to support scientific research and education.[88]

B. Tier 2: Government Rights

In addition to providing for contractor rights, the Bayh-Dole Act established the conditions under which federal agencies had rights to full title in contractor inventions. Further, the Act provided for the government's rights to ensure utilization of contractor owned inventions through imposition of mandatory licenses ("march-in rights").

1. Ownership Rights

The Bayh-Dole Act subordinated the government's right to title beneath contractors' rights to obtain full title to subject inventions.[89] The Act gave federal agencies that are party to funding agreements the opportunity to obtain full title to federally funded inventions only if the contractor chose not to retain title, failed to disclose the invention to the federal agency, or if the funding

85. 35 U.S.C. § 202(c)(7)(A) (1982) ("[A] prohibition upon the assignment of rights to a subject invention in the United States without the approval of the Federal agency, except where such assignment is made to an organization which has as one of its primary functions the management of inventions and which is not, itself, engaged in or does not hold a substantial interest in other organizations engaged in the manufacture or sale of products or the use of processes that might utilize the invention or be in competition with embodiments of the invention (provided that such assignee shall be subject to the same provisions as the contractor).").

86. *Id*. § 202(c)(7)(B) ("[A] prohibition against the granting of exclusive licenses under United States Patents or Patent Applications in a subject invention by the contractor to persons other than small business firms for a period in excess of the earlier of five years from first commercial sale or use of the invention or eight years from the date of the exclusive license excepting that time before regulatory agencies necessary to obtain premarket clearance unless, on a case-by-case basis, the federal agency approves a longer exclusive license.").

87. *Id*. § 202(c)(7)(B) ("[A] requirement that the contractor share royalties with the inventor.").

88. *Id*. § 202(c)(7)(C) ("[A] requirement that the balance of any royalties or income earned by the contractor with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, be utilized for the support of scientific research or education.").

89. *See* Fenn v. Yale Univ., 393 F. Supp. 2d 133, 137 (D. Conn. 2004) (stating that the only way for the government to obtain right to title is for the contractor to elect not to retain title).

agreement provided for any of three pre-defined exceptions.[90]

2. *March-In Rights*

Beyond the government's secondary rights to title, Bayh-Dole also allowed federal agencies to force contractors to license subject inventions in any field of use to any reasonable applicant ("march-in rights") provided any of the following conditions were met:[91]

1. The contractor has not taken, or is not expected to take steps to successfully apply the invention;[92]
2. The contractor has not reasonably addressed health or safety needs;[93]
3. The contractor has failed to meet requirements for public use; [94] or
4. The contractor or its licensee has failed to comply with the Act's requirement that subject inventions be manufactured substantially within the United States.[95]

The federal agency could compel contractors to grant non-exclusive, partially exclusive, or exclusive licenses in any field of use upon any terms

---

90. 35 U.S.C. § 202(a) ("Each nonprofit organization or small business firm may, within a reasonable time after disclosure as required by paragraph (c)(1) of this section, elect to retain title to any subject invention . . . ."); *Id.* § 202(c)(1)–(2). The Bayh-Dole Act established three exceptions under which a federal agency could unilaterally take title to contractor inventions. *Id.* § 202(a) (amended 1984). First, a federal agency can require that the government take title to inventions when the "funding agreement is for the operation of a Government-owned research or production facility." *Id.* § 202(a)(i). Second, contractors may be disallowed from retaining title in "exceptional circumstances when it is determined by the agency . . . [to] better promote the policy and objectives" of the Act. *Id.* § 202(a)(ii). Third, the federal government may prevent contractors from retaining title to subject inventions when "necessary to protect the security of . . . foreign intelligence or counter-intelligence activities." *Id.* § 202(a)(iii).

91. *Id.* § 203.

92. *Id.* § 203(a) ("[A]ction is necessary because the contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use . . . .").

93. *Id.* § 203(b) ("[A]ction is necessary to alleviate health or safety needs which are not reasonably satisfied by the contractor, assignee, or their licensees . . . .").

94. *Id.* § 203(c) ("[A]ction is necessary to meet requirements for public use specified by federal regulations and such requirements are not reasonably satisfied by the contractor, assignee, or licensees . . . .").

95. *Id.* § 203(d) ("[A]ction is necessary because the agreement required by section 204 has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of its agreement obtained pursuant to section 204."). For clarity, Section 204 is reproduced here:

> Notwithstanding any other provision of this chapter, no small business firm or nonprofit organization which receives title to any subject invention and no assignee of any such small business firm or nonprofit organization shall grant to any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by the federal agency under whose funding agreement the invention was made upon a showing by the small business firm, nonprofit organization, or assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

Id. § 204.

reasonable under the circumstances.[96] Further, if the contractor refused to grant the required license, the federal agency party to the funding agreement was authorized to grant the license itself.[97]

C. Tier 3: Inventor Rights

Unlike its provisions for contractors and federal agencies, the Bayh-Dole Act granted very limited rights to employee-inventors that were party to funding agreements.

1. Ownership Rights

Inventors could only retain title to a subject invention if 1) the contractor did not elect to retain title to the invention, 2) the inventor requested to retain rights to the invention, and 3) the federal agency granted the inventor's request after consultation with the contractor.[98] The Act subordinated inventors' rights to title beneath both contractors' and federal agencies' rights.

2. Rights to Royalties

Beyond establishing inventors' minimal rights to acquire title to federally funded inventions, Bayh-Dole required that inventors share in royalties stemming from subject inventions when the contractor party to a funding agreement was a nonprofit organization.[99] Small business firms had no obligation to share invention royalties with their employee-inventors.

The three-tier, hierarchical system described in this section was commonly recognized after Bayh-Dole's enactment and prior to more recent case law, including *Stanford v. Roche*. In recent cases, however, the Federal Circuit and the Supreme Court have reevaluated the Bayh-Dole Act and revised its prior interpretation.[100]

IV. *FILMTEC CORP. V. ALLIED-SIGNAL, INC.*

On July 22, 1991, the Court of Appeals for the Federal Circuit took the first major step in complicating the disposition of intellectual property rights in federally funded inventions under the Bayh-Dole Act.[101] In *FilmTec Corp. v. Allied-Signal, Inc.*, the court created a doctrine to govern interpretation of intellectual property assignment agreements made before an invention is conceived or reduced to practice, e.g., university pre-invention assignment

96. *Id.* § 203.
97. *Id*.
98. *Id*. § 202(d) ("If a contractor does not elect to retain title to a subject invention in cases subject to this section, the Federal agency may consider and after consultation with the contractor grant requests for retention of rights by the inventor subject to the provisions of this Act and regulations promulgated hereunder.").
99. *Id*. § 202(c)(7)(c).
100. *See infra* Parts IV, V.
101. FilmTec Corp. v. Allied-Signal, Inc., 939 F.2d 1568 (Fed. Cir. 1991).

agreements.[102] The court created a distinction between employers' rights to full title after employees' invention and employers' rights to mere equitable title before actual invention.[103]

Before 1978, John E. Cadotte was employed by the North Star Division of the Midwest Research Institute (MRI), a not-for-profit research organization.[104] MRI conducted primarily contract research on reverse osmosis membrane technology for the U.S. Government.[105] MRI's contract with the government provided that MRI "agrees to grant and does hereby grant to the Government the full and entire domestic right, title and interest in" any inventions, patentable or not, made in the course of research under the contract.[106]

In the summer or fall of 1977, Cadotte and three others founded FilmTec Corporation, and in January 1978, Cadotte left MRI.[107] In February 1979, Cadotte submitted a patent application for a reverse osmosis membrane and a method for using the membrane to reduce the concentration of solute molecules and ions in solution.[108] Cadotte assigned his rights in the patent application and any later issued patent on the technology to FilmTec.[109] The patent application ultimately issued as the '344 patent.[110] FilmTec subsequently learned that Allied-Signal, Inc. began manufacturing a similar reverse osmosis membrane, and FilmTec sued Allied for infringement of the '344 patent.[111]

It was undisputed that sometime between FilmTec's founding and the time Cadotte submitted his patent application in February 1979, Cadotte conceived of the patented invention.[112] However, it was unclear whether Cadotte had conceived of the invention while still employed by MRI and still subject to his assignment agreement with MRI, or whether he had conceived of the invention after leaving MRI for FilmTec.[113] In an attempt to undermine FilmTec's standing to sue, Allied alleged that Cadotte conceived of the invention sometime between July and November 1977, while still employed by MRI.[114] Cadotte, however, alleged that his assignment to FilmTec was valid because he did not conceive of the invention until February 1978, a month after leaving MRI.[115]

The District Court for the Southern District of California found that at most, MRI's agreement with the government conferred equitable title to

102. *Id*. at 1573–74.
103. *Id*. at 1572 (citing Samuel Williston, *Transfers of After-Acquired Personal Property*, 19 HARV. L. REV. 557 (1906)).
104. *Id*. at 1570.
105. *Id*.
106. *Id*.
107. *Id*.
108. *Id*. at 1569–70.
109. *Id*. at 1570.
110. *Id*. at 1569.
111. *Id*. at 1570.
112. *Id*.
113. *Id*.
114. *Id*.
115. *Id*.

Cadotte's invention on the government.[116] According to the court, equitable title could not be raised as a defense to infringement against the legal titleholder.[117] The court then issued a preliminary injunction against defendant Allied enjoining it from making, using, or selling subject matter protected by the '344 patent or actively inducing others to do so.[118]

Allied appealed the preliminary injunction to the Court of Appeals for the Federal Circuit, which had serious doubts as to who actually had title to the invention and the subsequently issued patent.[119] Allied argued that MRI's contract with the government vested legal title to the invention in the government.[120] Thus, when Cadotte assigned his rights to FilmTec, he had no rights to assign, and FilmTec, therefore, lacked standing to bring suit.[121] FilmTec, however, argued that by virtue of its agreement with MRI, the government would have acquired at most an equitable title to the '344 patent.[122] Under 35 U.S.C. § 261 then,[123] Cadotte's subsequent assignment of legal title to FilmTec voided the Government's equitable title to the invention.[124]

The Federal Circuit first clarified that property rights in an invention are by definition and by statute considered personal property as opposed to real property.[125] As a matter of law, patents have the attributes of personal property, and, as such, patents and patent applications may be assigned.[126] Further, the law has long recognized that between the time of an invention and the issuance of the patent on that invention, rights to the invention may be assigned and legal title will pass to the assignee upon the patent's issuance.[127]

Although the court acknowledged that patent rights are assignable both before and after invention, the court drew a basic contract law distinction between the two.[128] The court stated that while still considered a valid assignment,[129] an assignment of rights in an invention *before* its actual

---

116. *Id.*
117. *Id.*
118. *Id*. at 1569.
119. *Id*.
120. *Id*. at 1571.
121. *Id*.
122. *Id*.
123. *Id.* at 1571 n.2 (citing 35 U.S.C. § 261 (1988) ("An assignment, grant or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice, unless it is recorded in the Patent and Trademark Office within three months from its date or prior to the date of such subsequent purchase or mortgage.")).
124. *Id.* at 1571.
125. *Id*. at 1572 n.5 (quoting A.S. Solomons v. United States, 21 Ct. Cl. 479, 483 (1886), *aff'd*, 137 U.S. 342 (1890)) ("Unlike personal property, [a patent] cannot be lost or found; it is not liable to casualty or destruction; it cannot pass by manual delivery. Like real property, it may be disposed of, territorially, by metes or bounds; it has its system of conveyancing by deed and registration; estates may be created in it, such as for years and in remainder; and the statutory action for infringement bears a much closer relation to an action of trespass than to an action in trover and replevin. It has too, what the law of real property has, a system of user by license.").
126. *Id*. at 1572 n.7 (citing 35 U.S.C. § 261 (1988) ("Applications for patent, patents, or any interest therein, shall be assignable in law by an instrument in writing.")).
127. *Id*. at 1572 (citing Gayler v. Wilder, 51 U.S. 477, 493 (1850)).
128. *Id*.
129. *Id*. (citing Mitchell v. Winslow, 17 F. Cas. 527, 531–32 (C.C.D. Me. 1843)).

invention must be viewed as assigning an expectant interest only.[130] Such an assignment confers on the assignee, at most, an equitable title.[131] However, the same pre-invention assignment agreement operates to vest full legal title in the assignee *after* the invention is actually invented.[132]

An inventor's later assignment to a third party would thus fail to divest the original assignee of its full legal title because the inventor would simply no longer have any rights to assign.[133] Although the court failed to hold on the particular facts of the case, university assignment drafters must be cognizant of the court's distinction between equitable and full title. Despite its holding, the court concluded by discussing hypothetical circumstances under which an inventor's subsequent, post-invention assignment to a third party could actually divest a prior assignee of full title.[134] Under the common law bona fide purchaser for value rule, when a full legal title-holder sells her rights to a third-party purchaser for value and without notice of an outstanding equitable claim or title, the purchaser acquires full title free from any encumbrances by prior assignees.[135] 35 U.S.C. § 261 goes beyond the common law rule and provides that when assigning a patent, a bona fide purchaser for value voids any prior assignment of rights if that prior assignee failed to timely record a prior assignment in the Patent and Trademark Office.[136] Under the statute, assignees must record the assignment within three months from the date of the assignment or prior to the date of the subsequent bona fide purchase.[137] The court noted that although the statute is silent on the distinction between equitable and full title transferred in a prior assignment, the statute is clearly intended to cut off prior assignee rights.[138] Therefore, a bona fide purchaser for value likely has the power to divest an assignee, e.g., a university, of even full legal title. To be considered a bona fide purchaser for valuable consideration under Section 261, a subsequent purchaser must satisfy two requirements.[139] First, the subsequent assignee must in fact be a purchaser for valuable consideration.[140] Unlike the classic conception of a purchaser under a deed of grant for whom the consideration requirement was a formality, under Section 261, a subsequent purchaser must be more than a donee or gratuitous

130. *Id*. at 1572 n.8 (citing Samuel Williston, *Transfers of After-Acquired Personal Property*, 19 HARV. L. REV. 557 (1906)).

131. *Id*. at 1752 (citing *Mitchell*, 17 F. Cas. at 532).

132. *Id*.

133. *Id*. ("[I]f [the employee-inventor] granted [the employer-contractor] rights in inventions made during his employ, and if the subject matter of the . . . patent was invented by [the employee-inventor] during his employ with [the employer-contractor], then [the employee-inventor] had nothing to give to [a third party] and his purported assignment to [a third party] is a nullity.").

134. *Id*. at 1573–74.

135. *Id*.

136. *Id*. at 1573.

137. 35 U.S.C. § 261 (1988) ("An assignment, grant or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice, unless it is recorded in the Patent and Trademark Office within three months from its date or prior to the date of such subsequent purchase or mortgage.").

138. *FilmTec Corp.*, 939 F.2d at 1573–74.

139. *Id*. at 1574.

140. *Id*.

transferee.[141] The assignee must pay consideration valuable enough to claim record reliance as a matter of law.[142] Second, a subsequent assignee must be without notice of any prior assignment.[143] In this case for example, if Cadotte's contract with MRI contained any provision assigning his rights in his inventions to MRI, then Cadotte would clearly be on notice of his own assignment agreement.[144] Because Cadotte was one of the four founding members of FilmTec, it is likely that FilmTec would have been put on constructive notice of the prior assignment to MRI.[145] Therefore, Cadotte's agreement with MRI would likely prevent the assignment to FilmTec from cutting off MRI's rights to the invention.[146]

V. *STANFORD V. ROCHE*

While FilmTec created uncertainty regarding the disposition of intellectual property rights before actual invention, the Supreme Court's interpretation of the Bayh-Dole Act in *Stanford v. Roche* undermined certainty of title even after actual invention.[147] On June 6, 2011, the Supreme Court ruled 7-2 that the Bayh-Dole Act neither grants title to federally funded inventions to federal contractors nor authorizes federal contractors to unilaterally take title to their employee's inventions.[148] Instead, the Court found that federal contractors must obtain patents to federally funded inventions through effective assignment agreements.[149] This holding contradicted thirty years of technology transfer practice under the Bayh-Dole Act as discussed in Part II above, and, therefore, understanding the Court's analysis is crucial in drafting future assignment agreements.[150] Carefully drafted pre-employment assignment agreements consistent with the requirements under *Stanford v. Roche* can ensure that Bayh-Dole operates to automatically vest exclusive title to federally funded inventions in federal contractors, as was understood until the Court's decision in *Stanford v.*

141. *Id.*
142. *Id.*
143. *Id.*
144. *Id.*
145. *Id.*
146. *Id.*
147. *See* Bd. of Trs. of the Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc., 131 S. Ct. 2188, 2192 (2011) ("Since 1790, the patent law has operated on the premise that rights in an invention belong to the inventor. The question here is whether the . . . Bayh-Dole Act . . . displaces that norm and automatically vests title to federally funded inventions in federal contractors. We hold that it does not.").
148. *Id.* at 2190. It is important to mention that the sole issue presented before the Court was whether Bayh-Dole displaces the basic patent law premise that an invention belongs to the inventor and automatically vests title in federal contractors. The Court did not fully analyze why Stanford's assignment failed or rule on whether the *FilmTec* rule is appropriate where Bayh Dole is applicable. *Id.* at 2192.
149. *See id.* at 2195 ("[W]e have recognized that unless there is an agreement to the contrary, an employer does not have rights in an invention 'which is the original conception of the employee alone.' Such an invention 'remains the property of him who conceived it.' In most circumstances, an inventor must expressly grant his rights in an invention to his employer if the employer is to obtain those rights." (citations omitted)).
150. *See supra* Part III (describing the rights-assignment regime under the Bayh-Dole Act as originally understood).

Roche.[151] A brief summary of the Court's reasoning and analysis follows.

In 1985, Cetus began researching methods to identify and measure HIV present in human blood and subsequently started collaborating with researchers from Stanford University's Department of Infectious Diseases.[152] Dr. Mark Holodniy began work at Stanford around this time and signed a Copyright and Patent Agreement (CPA) as a condition of employment.[153] Stanford's CPA required Holodniy to "agree to assign" to Stanford all of his rights and interests in inventions arising from his employment at the university.[154] With Stanford's permission, Holodniy began a temporary engagement with Cetus to familiarize himself with a process called Polymerase Chain Reaction (PCR) developed at Cetus and integral to Holodniy's research.[155] As a condition of granting Holodniy access to Cetus's labs, Holodniy was required to sign a Visitor's Confidentiality Agreement (VCA) stating he "will assign and do[es] hereby assign" to Cetus all rights to any ideas or inventions developed as a result of his access to Cetus's facilities.[156] Cetus's insistence on such an agreement proved prudent.

While at Cetus, Holodniy conceived of a procedure to measure the amount of HIV present in an individual's blood using Cetus's PCR process.[157] Over the next several years, Holodniy refined the procedure at Stanford, and Stanford diligently obtained written assignments of rights to Holodniy's procedures.[158] As a result, Stanford filed patent applications on Holodniy's PCR-based tests and was granted three patents on the HIV measurement process.[159] Then, in 1991, Roche Molecular Systems purchased the rights to all of Cetus's PCR-related products, including those rights assigned to Cetus in Holodniy's VCA.[160] Roche then commercialized Holodniy's PCR-based methods for detecting HIV and began selling HIV testing kits worldwide.[161]

In 2005, Stanford sued Roche in the United States District Court for the Northern District of California alleging that the HIV tests Roche sold infringed Stanford's patents on the underlying testing methods devised by Holodniy.[162] Stanford argued that Holodniy's VCA with Cetus failed to grant Cetus any rights to Holodniy's inventions, whether or not he conceived of his PCR-based tests while at Cetus.[163] Holodniy's research was federally funded, and by operation of the Bayh-Dole Act, Stanford automatically acquired sole title to all of Holodniy's inventions.[164] Because Holodniy himself had no rights in his

151. *See infra* Parts VII–VIII (explaining how to draft agreements that will give federal contractors, and in particular universities, rights in the inventions of their employees).
152. *Stanford*, 131 S. Ct. at 2192.
153. *Id*.
154. *Id*.
155. *Id*.
156. *Id*.
157. *Id*.
158. *Id*.
159. *Id*.
160. *Id*.
161. *Id*.
162. *Id*. at 2193.
163. *Id*.
164. *Id*.

inventions, Cetus's VCA granted Cetus nothing.[165]

The district court agreed. The court held that because the Bayh-Dole Act applied to the patents in issue, Holodniy had no rights to the underlying methods and, therefore, assigned nothing to Cetus.[166] The Bayh-Dole Act automatically conferred sole title on Stanford, and individual inventors like Holodniy could obtain title to federally funded inventions only after both the government and the federal contractor relinquished their rights to the inventions.[167]

The Court of Appeals for the Federal Circuit, however, disagreed.[168] The Federal Circuit distinguished between Holodniy's agreement with Stanford and his agreement with Cetus.[169] Holodniy's assignment agreement with Stanford required Holodniy to "agree to assign"[170] while his agreement with Cetus required that he "assign and do hereby assign"[171] all rights in his inventions. The court reasoned that the language "agree to assign" created no more than a promise to assign rights in the future.[172] The language in Cetus's VCA, "assign and do hereby assign," however, automatically assigned all of Holodniy's rights in his inventions to Cetus.[173] Cetus's rights consequently overrode Stanford's mere expectant interest, and Cetus acquired full title to Holodniy's HIV testing procedures.[174]

The court then commented broadly on how the Bayh-Dole Act functions in such situations.[175] The court held that the Act does not automatically divest inventors or their rights to even federally funded inventions.[176] The Bayh-Dole Act could not function to void Holodniy's inherent rights in his own inventions, and therefore, Cetus acquired at least a partial ownership interest in Holodniy's inventions by virtue of Cetus's VCA.[177] It followed then that because Roche acquired all of Cetus's intellectual property in PCR-based HIV testing, Roche was a partial owner of the patents in suit, and as such, Stanford had no standing to sue Roche.[178]

The Supreme Court granted certiorari and decided the case on June 6, 2011.[179] The Court first clarified that because Holodniy's research was supported by grants from the National Institute of Health (NIH) and because Stanford had complied with Bayh-Dole's reporting requirements, the Act's

165. *Id*.
166. *Id*. at 2194.
167. *Id*.
168. *Id*.
169. *Id*.
170. *Id*. at 2202 (Breyer, J., dissenting) (quoting Petition for Writ of Certiorari, app. k at 119a *Roche*, 131 S. Ct. 2188 (No. 09-1159)).
171. *Id*. (Breyer, J., dissenting) (quoting Petition for Writ of Certiorari, app. k at 123a *Roche*, 131 S. Ct. 2188 (No. 09-1159)).
172. *Id*. at 2194.
173. *Id*.
174. *Id*.
175. *Id*.
176. *Id*.
177. *Id*.
178. *Id*.
179. *Id*. at 2188.

provisions on disposition of rights would apply in this case.[180] However, the Court found that to comport with patent law's most foundational concepts, the Bayh-Dole Act could not function as had been previously understood.[181] First, patent law has always granted inventors the right to patent their own inventions.[182] Second, absent an assignment agreement to the contrary, employers have no automatic ownership rights in their employee's inventions.[183] Employers can obtain rights to their employee's inventions only through an express grant from the employee-inventor.[184]

The Court reasoned that divesting inventors of their rights to federally funded inventions by vesting full title in universities would directly contradict our most basic understanding of the patent system.[185] If Congress had intended to do so, it certainly would have used clear, unequivocal language.[186] In support, the Court identified several congressional acts in which Congress unequivocally divested inventors of rights to their inventions and instead vested full rights in a third party—most commonly the government.[187] The Court noted that all of the acts divesting inventors of their basic rights contained unequivocal language doing so, and that such language was "notably absent" from the Bayh-Dole Act.[188] Nowhere in the Act could the Court find language expressly vesting title in contractors, and nowhere in the Act could the Court find provisions expressly depriving inventors of their patents rights in federally funded inventions.[189] The Court interpreted Bayh-Dole's use of the term "inventions of the contractor" to include only those inventions actually owned by the federal contractor, not *all* inventions conceived or reduced to practice by the contractor's employees.[190] Bayh-Dole's language

180. *Id.* at 2193. The Court stated specifically that Stanford properly "disclosed the invention, conferred on the Government a nonexclusive, nontransferable, paid-up license to use the patented procedure, and formally notified NIH that it elected to retain title to the invention." *Id.*

181. *See id.* at 2199 ("With an effective assignment . . . the statute as a practical matter works pretty much the way Stanford says it should. The only significant difference is that it does so without violence to the basic principle of patent law that inventors own their inventions.").

182. *Id.* at 2194. The Court quoted the Patent Act, which states that "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter . . . may obtain a patent therefor." *Id.* (alteration in original) (quoting 35 U.S.C. § 101 (2006)).

183. *Id.* at 2195 (quoting United States v. Dubilier Condenser Corp., 289 U.S. 178, 189 (1933)).

184. *Id.* (citing *Dubilier*, 289 U.S. at 187). The Court also took issue with Stanford's reading of Bayh-Dole's definition of subject inventions as inventions "conceived or first actually reduced to practice" at the university. *Id.* at 2198–99. The Court disagreed that the Bayh-Dole Act granted universities sole title to employee inventions conceived before the inventor's engagement with the university but reduced to practice while at the university. *Id.*

185. *Id.* at 2198–99.

186. *Id.*

187. *Id.* at 2195 ("For example, with respect to certain contracts dealing with nuclear material and atomic energy, Congress provided that title to such inventions 'shall be vested in, and be the property of, the [Atomic Energy] Commission.' 42 U.S.C. § 2182. Congress has also enacted laws requiring that title to certain inventions made pursuant to contracts with the National Aeronautics and Space Administration 'shall be the exclusive property of the United States,' Pub.L. 111–314, § 3, 124 Stat. 3339, 51 U.S.C. § 20135(b)(1), and that title to certain inventions under contracts with the Department of Energy 'shall vest in the United States.' 42 U.S.C. § 5908." (alteration in original)).

188. *Id.* at 2195–96.

189. *Id.* at 2196.

190. *Id.* at 2196–97 ("We have rejected the idea that mere employment is sufficient to vest title to an employee's invention in the employer.").

allowing contractors to "elect to retain" title to their employees' inventions simply allows contractors to keep title to whatever inventions they already own, and the Court was clear that without an explicit assignment agreement transferring an employee's rights, the contractor owns nothing.[191] Put simply, the Bayh-Dole only takes effect after a contractor has acquired full title to an invention by operation of an effective assignment agreement.[192]

Critics of the Court's decision argue that it undermines the Bayh-Dole Act's structure and threatens to prevent its continued successful application, but the Court gave such concerns little consideration.[193] The Court shifted the source of federal contractors' rights from statutory to contractual, and argued that, in so doing, it simply placed responsibility in federal contractors' hands.[194] The Court assumed that because universities already include pre-invention assignment agreements as a condition for employment, the Bayh-Dole Act would continue to function as usual even after the Court's holding.[195] By using the "do hereby assign" language from the Cetus agreement instead of Stanford's "agree to assign" language, universities can ensure effective assignment agreements and effectively pull all employee inventions within Bayh-Dole's purview.[196] The Court was clear, however, that Bayh-Dole alone never divests inventors of patent rights in their inventions.[197] After *Stanford v. Roche*, therefore, proper drafting of university pre-employment assignment agreements has become critical to protecting universities' intellectual property rights.

VI. PATENT REFORM

Beyond adhering to the Court's requirements for proper assignment agreements under *Stanford v. Roche*,[198] universities can facilitate title transfer by taking advantage of new assignment provisions under the Leahy-Smith America Invents Act ("Patent Reform").[199] Under the existing Patent Act, the actual inventor must, as a general rule, file the patent application for his or her own invention.[200] "This rule applies even when individuals develop inventions in their capacity as employees" and even when those inventions have been contractually assigned to their employers.[201] However, the rules on inventor oaths and assignee filing will change dramatically after Patent Reform takes

191. *Id.* at 2196–99.

192. *Id.* at 2197 (concluding that only when an invention already "belongs to the contractor does the Bayh-Dole Act come into play"). The word "retain," the Court concluded, indicated that the Bayh-Dole Act "serves to clarify the order of priority of rights between the Federal Government and a federal contractor" when a federally funded invention "already belongs to the contractor. Nothing more." *Id.*

193. *Id.* at 2199–205 (Breyer, J. dissenting).

194. *Id.* at 2199.

195. *Id.*

196. *Id.* at 2202 (Breyer, J. dissenting).

197. *Id.* at 2197.

198. *See supra* Part V.

199. Leahy-Smith America Invents Act, Pub. L. No. 112-29, §§ 115, 118, 125 Stat. 284, 293–294 (2011).

200. 35 U.S.C. § 111 (2006) (amended 2011).

201. WENDY H. SCHACHT & JOHN R. THOMAS, CONG. RESEARCH SERV., R 41638, PATENT REFORM IN THE 112TH CONGRESS: INNOVATION ISSUES 13 (2011).

effect.[202]

A. Assignee Filing Before September 16, 2012

Current U.S. patent law requires every inventor applying for a patent to submit an oath that she believes herself to be the original and first inventor of the subject matter on which she has submitted the application.[203] Despite the general rule that inventors must file their own patent applications, the Patent Act contains a few narrow exceptions under which someone other than the inventor can submit a patent application.[204] Under § 118 of the Patent Act, an assignee may submit a patent application on the subject matter in question,[205] but only if all of the following circumstances are present:

1. the inventor refuses to execute the patent application or cannot be found after diligent effort;[206]
2. the assignee submits the application on behalf of and as agent for the inventor;[207]
3. the assignee provides proof of the pertinent facts; and[208]
4. the assigned provides a showing that such action is necessary to preserve the rights of the parties or to prevent irreparable damage.[209]

Assuming the assignee satisfies all of these requirements, the Director is authorized to grant a patent to the *inventor*, but not to the assignee who submitted the patent application.[210] Then, assuming the applicable assignment agreement operates effectively, the assignee would obtain title to the patented invention by operation of contract.

B. Assignee Filing After September 16, 2012

Patent Reform, enacted on September 16, 2011, amended the rules governing the inventor's oath and assignee filing.[211] Patent Reform still requires an oath, but since September 16, 2012, Patent Reform now provides several ways in which someone other than the inventor can submit the required oath or declaration.

First and most importantly, an inventor who is under an obligation to assign the patent application in question may in the future include the required oaths in the assignment agreement itself, as opposed to submitting separate

---

202. Leahy-Smith America Invents Act §§ 115, 118.
203. 35 U.S.C. § 115 (2006) (amended 2011).
204. *Id.* § 118 (2006).
205. *Id.*
206. *Id.*
207. *Id.*
208. *Id.*
209. *Id.*
210. *Id.*
211. *See generally* Leahy-Smith America Invents Act, Pub. L. No. 112–29, §§ 115, 118, 125 Stat. 284, 293–97 (2011) (enacting patent reform).

statements.[212] This provision allows employers to efficiently file patent applications on technologies to which they have been assigned the rights.[213] Second, applicants now are permitted to provide a substitute statement in lieu of a traditional oath or declaration if the inventor:[214]

1. is deceased;[215]
2. is under legal incapacity;[216]
3. cannot be found or reached after diligent effort;[217] or
4. is under an obligation to assign the invention but has refused to make the oath or declaration.[218]

Under Patent Reform, an assignee may simply submit a patent application on the subject matter in question.[219] The assignee is not required to satisfy any of the conditions required by the Patent Act. Further, the Director is authorized to grant a patent to the "real party in interest," not necessarily to the inventor.[220] While allowing assignees to file patent applications and obtain patents somewhat unilaterally may seem like a dramatic departure from prior patent policy, such reforms have been discussed for years.[221] Further, in the context of employee-inventors who customarily contract to assign their rights to their employers, Patent Reform simply cut through the red tape and formality of assignment agreements and made the process more convenient.[222]

VII. PRE-INVENTION EMPLOYEE & INDEPENDENT VISITOR ASSIGNMENT AGREEMENTS

As is evident from *FilmTec*, *Stanford v. Roche*, and Patent Reform, legal disposition of intellectual property rights in federally funded inventions is

212. Leahy-Smith America Invents Act § 115(e).
213. SCHACHT & THOMAS, *supra* note 201, at 13.
214. Leahy-Smith America Invents Act § 115(d)(1).
215. *Id.* § 115(d)(2)(A)(i).
216. *Id.* § 115(d)(2)(A)(ii).
217. *Id.* § 115(d)(2)(A)(iii).
218. *Id.* § 115(d)(2)(B).
219. *Id.* § 118.
220. *Id.*
221. For example, a 1966 Report of the President's Commission on the Patent System recommended assignee filing to simplify application filing and to eliminate delays inherent in the need to identify and obtain signatures from every inventor party to a given patent application. SCHACHT & THOMAS, *supra* note 201, at 14. In addition, the 1992 Advisory Commission on Patent Law Reform recommended assignee filing as a beneficial component to the United States' shift to a first-to-file system. *Id*. The Commission determined that assignee filing would allow employer-contractors to file patent applications more promptly and thus ensure priority to protection. *Id*.
222. *Id.* at 13. Critics of the corporate inventorship model, however, argue that assignee filing may destroy "a very significant recognition" that inventions "are conceived of and reduced to practice by *human beings*, not fictitious corporations." Patrick, *Patent Reformers Favor Corporate Interests Over Inventor's Rights*, GAMETIME IP (Feb. 23, 2011), http://gametimeip.com/2011/02/23/patent-reformers-favor-corporate-interests-over-inventors-rights/. "Despite all the difficulty, red tape and unwarranted ridicule that comes with acquiring and licensing patented inventions, the fact that actual inventors might presumptively own the fruits of their own mental labor might be one of the few things that keeps hope alive, encouraging inventors to continue to invent, even on their own time, away from the confines of their cubicles. The new procedure threatens to reduce recognition for one's own efforts to a mere formality." *Id.*

currently in muddy waters.[223] Certainty of title and exclusive rights to inventions, however, are crucial to research, development, and the ultimate commercialization of federally funded technologies.[224] Investors often want assurances of exclusive title to inventions before incurring any costs at all.[225] Without exclusive, certain title, investors run the risk of other assignees or concurrent titleholders assigning patent rights to third parties.[226] These third parties could subsequently compete with other investors, unrealistically drive down the price of marketable products, and make profitable investment in such technologies infeasible.[227]

Requiring existing university employees to assign inventions to the university presents problems. Assignment by an existing employee must be supported by additional consideration beyond that provided in support of the employee's original employment contract. Before *Stanford v. Roche*, university employers could effectively claim faculty's patent rights by including patent assignment language in the university's administrative policies.[228] The Federal Circuit held that by accepting appointment subject to those administrative guidelines, university faculty obligated themselves to abide by those guidelines, including assigning inventions to the university.[229] It is unclear, however, whether this method remains viable in the wake of *Stanford v. Roche*.

To solve this problem, universities should attempt to acquire title to all inventions made at the university by making employee assignment agreements an explicit condition of employment with the university.[230] Assignment agreements can be reached even before the researcher begins engagement with the university and long before the researcher has produced anything worth assigning.[231] These pre-invention assignment agreements are generally considered enforceable by courts and provide significant intellectual property protection for universities and their collaborators.[232]

Conditioning employment on obtaining an assignment agreement can present challenges. First, universities generally propose continued employment, the ability to research, and use of facilities as consideration for the employee's assignment. Some questions exist as to whether this consideration is adequate. Second, prospective employees may try to negotiate the terms of the agreement, and administering each assignment could become

223. See *supra* Parts IV on *FilmTec*, V on *Stanford v. Roche*, and VI on Patent Reform.

224. Rochelle Cooper Dreyfuss, *Collaborative Research: Conflicts on Authorship, Ownership, and Accountability*, 53 VAND. L. REV. 1162, 1212 (2000).

225. *Id.*

226. *Id.* at 1211–12.

227. *See id.* at 1212 ("If [statutory coinventors] cannot manage to cooperate, they and their assignees can easily compete the price of embodiments down to cost.").

228. Chou v. Univ. of Chicago, 254 F.3d 1347, 1356–57 (Fed. Cir. 2001).

229. *Id.*

230. *See* Dreyfuss, *supra* note 224, at 1212 (explaining that exclusivity is usually "accomplished by establishing an employment relationship and making the duty to assign inventions to the employer a condition of employment").

231. *See id.* at 1212–13 (discussing such assignment contracts in the university context).

232. *Id.* at 1213.

difficult at large institutions. Third, university employees may be unionized, and collective bargaining agreements may interfere with obtaining assignment agreements. Fourth, an employee may simply refuse to sign. Universities could stand to lose valuable faculty to an institution less demanding of pre-invention assignments.

Providing a university obtains agreement from a prospective employee, pre-employment assignment agreements must still function properly to be of any use. Assignment agreements must comply with the complex requirements established by *FilmTec*, *Stanford v. Roche*, and Patent Reform.[233] This section will discuss the various provisions, drafting techniques, and actions universities can take to ensure proper and timely assignment of inventions by 1) its employee researchers and students; and 2) visiting inventors without already existing research agreements at other institutions.

A. Require Disclosure and Automatic Assignment

Universities can preserve their rights in employee inventions by drafting assignment agreements that 1) unequivocally and automatically grant universities rights; 2) obligate inventors to create and disclose a detailed record of developments as they occur; 3) require inventors to assist the university in promptly applying for patents; and 4) allow contractors to unilaterally file patent applications.

1. Unequivocally and Automatically Grant Rights

As discussed, in *Stanford v. Roche* the Supreme Court held that the Bayh-Dole Act does not automatically confer title to federally funded inventions on contractors, such as universities, or authorize contractors to unilaterally assume title to their employees' inventions.[234] According to the Court, contractors have no claim to employee inventions even though they arise from federal funding unless the employee expressly grants his or her rights to the contractor.[235] Assignment agreements must, therefore, explicitly assign employee inventions to employers, federally funded or not.[236]

According to *FilmTec* and *Stanford v. Roche*, assignment provisions' particular phrasing can mean the difference between an effective, automatic assignment and a university's failure to acquire full rights to its employee's inventions.[237] Under *FilmTec*, assignment agreements made before actual

233. See *supra* Parts IV on *FilmTec*, V on *Stanford v. Roche*, and VI on Patent Reform.

234. Bd. of Trs. of Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc., 131 S. Ct. 2188, 2197 (2011); *see supra* Part V (discussing patent reform).

235. *Stanford*, 131 S. Ct at 2195–97 (citing United States v. Dubilier Condenser Corp., 289 U.S. 178, 189 (1933)).

236. *Id.* at 2199 ("[U]niversities typically enter into agreements with their employees requiring the assignment to the university of rights in inventions. With an effective assignment, those inventions—if federally funded—become 'subject inventions' under the Act, and the statute as a practical matter works pretty much the way Stanford says it should.").

237. *Id.* at 2202 (Breyer, J., dissenting) ("The Federal Circuit held that the earlier Stanford agreement's use of the words "agree to assign," when compared with the later Cetus agreement's use of the words "do hereby assign," made all the difference. It concluded that, once the invention came into existence, the latter

invention assign only an expectant interest in the assigned intellectual property.[238] Therefore, university assignees have only equitable title to employee inventions up until the moment of invention.[239] Once an invention is actually conceived or reduced to practice at the university, however, the assignment agreement's language becomes paramount.[240] Under *Stanford v. Roche*, the phrase "agree to assign" constitutes only a promise to assign in the future.[241] The university employer would have to obtain an actual post-invention assignment agreement to acquire full title to the invention.[242] Without this post-invention assignment, the university would maintain only its pre-existing expectant interest and equitable title.[243] By contrast, the phrase "will assign and do hereby assign" in a pre-invention assignment agreement affirmatively vests full title in the assignee at the moment of invention, automatically converting the university's equitable title to full title.[244] Pre-invention assignment agreements must use the "do hereby assign" language identified by the Court in *Stanford v. Roche*.

In addition, because the date of invention becomes so critical to the disposition of rights in pre-invention assignment agreements under *FilmTec*, drafters must clearly identify the moments at which an inventor's affirmative assignment takes effect. The *FilmTec* Court held that properly drafted assignment agreements automatically vest title at the moment of "invention."[245] Under U.S. patent law and the Bayh-Dole Act's definition of subject inventions, the moment of invention occurs either at conception or at the first actual reduction to practice,[246] but assignment agreements should error on the side of over-inclusiveness when defining the moment of invention. Drafters should clearly identify "conception," "reduction to practice," and "invention" as events triggering automatic assignment of full title to the university-assignee.[247] Further, university assignment agreements should include a note clarifying that inventions conceived before the inventor's engagement with the university are subject to the assignment agreement if the inventions were first reduced to practice during the inventor's university engagement.[248] By explicitly conforming to the requirements under *FilmTec*, *Stanford v. Roche*, and the Bayh-Dole Act, university pre-invention assignment

words meant that the Cetus agreement trumped the earlier, Stanford agreement.").

238. FilmTec Corp. v. Allied-Signal, Inc., 939 F.2d 1568, 1572 (Fed. Cir. 1991).

239. *Id.*

240. *Id.* at 1573–74.

241. *Stanford*, 131 S. Ct. at 2192–95, 2199.

242. *Id.*

243. *Id.*

244. *Id.*

245. *FilmTec*, 939 F.2d at 1572.

246. 35 U.S.C. § 201(e) (1980).

247. *See, e.g.*, MASS. INST. OF TECH., INVENTIONS AND PROPRIETARY INFORMATION AGREEMENT (2010), *available at* http://web.mit.edu/tlo/www/downloads/doc/IPIA.doc [hereinafter MASS. INST. OF TECH., AGREEMENT]. *See generally FilmTec*, 939 F.2d at 1568.

248. The Bayh-Dole Act defines a subject invention as any invention "conceived *or* first actually reduced to practice in the performance of work under a funding agreement." 35 U.S.C. § 201(e) (1980) (emphasis added). Bayh-Dole's use of the term "or," instead of "and," allows universities to take title to contractor inventions only conceived or only first reduced to practice at the university. *Id.*; MASS. INST. OF TECH., AGREEMENT, *supra* note 247.

agreements can ensure automatic vesting of full title at the earliest possible moment. The following subsections discuss assignment provisions for university employees and students, and for visiting inventors without research agreements with other institutions.

a. University Employees and Students

For a pre-invention assignment agreement to operate effectively, its drafters must take care to identify under what circumstances the agreement will automatically transfer title to the university. Assignment agreements should obligate university employees and graduate students employed by the university to assign inventions developed under a variety of circumstances that qualify as engagement with the university.[249] Agreements between university employees or students and the university should provide, at a minimum, for assignment of rights to inventions developed: 1) in the course of sponsored research; 2) with significant use of university funds or facilities; 3) under a work-for-hire assignment; or 4) as a result of the employee's duties or in the course of their employment.[250] Because terms like "work-for-hire" and "significant use of funds or facilities" are ambiguous, the university should take care to eliminate any room for debate on what exactly falls within such agreements. The university should define these terms and refer the assignor to those definitions. A sample assignment provision for employees and students incorporating the automatic assignment language required by *Stanford v. Roche* and *FilmTec* follows:

> I will assign, and do hereby assign, to [insert university here] all rights to all inventions, copyrightable materials, computer software, semiconductor mask works, tangible research property, and trademarks ("Intellectual Property") conceived, invented, reduced to practice, or authored by me, either solely or jointly with others, which:
>
> 1. are developed in the course of or pursuant to a sponsored research or other agreement in which I am a participant; or
> 2. result from the significant use of [insert university here] administered funds or [insert university here] facilities; or
> 3. result from a work-for-hire funded by [insert university here].[251]

Please note that inventions previously conceived, even though a patent application has been filed or a patent issued, are subject to this Agreement if they are actually first reduced to practice under the circumstances included in this paragraph.[252]

249. MASS. INST. OF TECH., AGREEMENT, *supra* note 247.
250. *Id.*
251. *Id.* (assignment provision used as a model for this Article).
252. *Id.*; Form, University of California, State Oath of Allegiance, Patent Policy, and Patent Acknowledgement (Oct. 1, 1997) (on file with author).

b. Visiting Inventors Not Subject To Collaborative Research Agreements

In addition, visiting researchers not employed by the university and not subject to any pre-existing sponsored research agreements with any other institutions should be bound to assign inventions developed while engaged with the university.[253] Agreements with visiting inventors can provide for assignment of rights to inventions developed in the course of sponsored research or with significant use of university funds or facilities.[254] A sample assignment provision for visiting inventors follows:

> I will assign, and do hereby assign, to [insert university here] all rights to all inventions, copyrightable materials, computer software, semiconductor mask works, tangible research property, and trademarks ("Intellectual Property") conceived, invented, reduced to practice, or authored by me, either solely or jointly with others, which:
>
> 1. are developed in the course of or pursuant to a sponsored research or other agreement in which I am a participant; or
> 2. result from the significant use of [insert university here] administered funds or [insert university here] facilities.[255]

Please note that inventions previously conceived, even though a patent application has been filed or a patent issued, are subject to this Agreement if they are actually first reduced to practice under the circumstances included in this paragraph.[256]

2. Create and Disclose a Detailed Record of Developments as They Occur

Because pre-invention assignment agreements under the Bayh-Dole Act and *FilmTec* vest full title in the assignee only after actual invention, assignment agreements should require employee-inventors to report their developments to universities as they are made.[257] By requiring inventors to disclose inventions' conception and reduction to practice, university-employers can know with relative certainty when their exclusive rights in inventions begin. Further, by requiring inventors to create and maintain records of their research as they conduct it, universities can develop a detailed record that may become useful in enforcing their rights against potential infringers. An

253. MASS. INST. OF TECH., INVENTIONS AND PROPRIETARY INFORMATION AGREEMENT FOR VISITING SCIENTIST 1 (2010), *available at* http://web.mit.edu/tlo/www/downloads/doc/IPIA_VS.doc [hereinafter MASS. INST. OF TECH., AGREEMENT FOR VISITING SCIENTIST].

254. *Id.* Requiring assignment of inventions developed during a work-for-hire engagement with the university would be unnecessary and extraneous because universities do not generally employ visiting inventors. In the case where a visiting inventor became, for some reason, a university employee, he or she should be required to submit the agreement for university employees and students discussed in Part VII.A.1.a above.

255. *Id.* (source of model assignment provision).

256. *See, e.g.*, *id*. (using identical language in its provision requiring inventors to assign intellectual property rights to M.I.T.); Form, University of California, *supra* note 252.

257. *See supra* Parts III, IV (discussing the Bayh-Dole Act and *FilmTec*).

assignment agreement is only as strong as the university's ability to enforce it. By requiring researchers to maintain timely records of conception, reduction to practice, and developments in general, universities become more prepared to prove their rightful ownership of such inventions. A sample provision follows:

> I will promptly report and fully disclose the conception and/or reduction to practice of any potential Intellectual Property to [insert university here] and will prepare and maintain for [insert university here] adequate and current written records of all such Intellectual Property.[258]

To benefit from inventors' records, however, universities must maintain control of all such records even after its inventors leave the university. Continued possession becomes especially important in cases like *FilmTec* where employee-inventors leave the university to commercialize innovations potentially conceived or reduced to practice while engaged with the university.[259] To prevent inventors from misappropriating inventions to which the university is entitled, universities should require inventors to deliver all records of their developments and inventions upon leaving the university.[260] A provision like the following will obligate employee-inventors to do so:

> I will deliver promptly to [insert university here] when I leave [insert university here] for whatever reason, and at any other time as [insert university here] may request, copies of all written records as well as all related memoranda, notes, records, schedules, plans or other documents, and tangible research property made by, compiled by, delivered to, or manufactured, used, developed or investigated by me or [insert university here], which will at all times be the property of [insert university here].[261]

3. Ensure Prompt Application for Patent

Beyond merely guaranteeing proper assignment of patentable inventions in compliance with *FilmTec* and *Stanford v. Roche*, universities should also make efforts to ensure that such inventions are ultimately patented.[262] Because actual inventors, regardless of ownership rights, are crucial to the patenting process, universities should include a provision requiring university inventors to assist the university in obtaining, maintaining, and enforcing the university's rights to assigned inventions. As discussed, under existing U.S. patent law, only inventors can file patent applications and be granted patents on their inventions despite the operation of automatic assignment agreements.[263] Even assignment agreements that confer full title on employers at the earlier of

258. *See, e.g.*, MASS. INST. OF TECH., AGREEMENT, *supra* note 247 (using similar language in its provision requiring inventors associated with M.I.T. to make such disclosures and engage in equivalent record-keeping procedures); Form, University of California, *supra* note 252.

259. *See supra* Part IV (discussing *FilmTec*).

260. MASS. INST. OF TECH., AGREEMENT, *supra* note 247.

261. *See, e.g.*, *id.* (using similar language in its provision requiring inventors at M.I.T. to promptly deliver the above-mentioned materials when leaving or requested).

262. *See supra* Parts IV, V (discussing *FilmTec* and *Stanford*, respectively).

263. *See infra* Part VI.A (discussing implications of the holding of *Stanford*).

conception or reduction to practice cannot circumvent this requirement.[264] Under the Patent Act, the inventor is still required to file the patent application even after an assignment agreement has vested full title to the invention in the university-assignee.[265] Therefore, until Patent Reform takes effect in late 2012,[266] it is in universities' best interests for assignment agreements to obligate inventors to assist the university with the steps only inventors can complete, i.e., providing the inventor's declaration and submitting the actual patent application.[267]

Further, universities should contract for inventors' assistance in maintaining and enforcing the university's rights even if they are no longer affiliated with the university. Obligating inventors to assist universities in obtaining or enforcing their rights even after leaving the university is critical to prevent inventors from assigning their rights to a third-party or pursuing commercialization of the invention in contravention of their existing university assignment agreement.[268] A sample provision obligating inventors to assist universities in obtaining, maintaining, and enforcing the university's intellectual property rights both during and subsequent to the inventor's affiliation with the university follows:

> I will execute all necessary papers and otherwise provide proper assistance, promptly upon [insert university here]'s request and at [insert university here]'s expense, during and subsequent to the period of my [insert university here] affiliation, to enable [insert university here] to obtain, maintain, or enforce for itself or its nominees, patents, copyrights, trademarks or other legal protection for such Intellectual Property.[269]

4. Allow Contractors to Unilaterally File Patent Applications

Because patent applications filed after Patent Reform takes effect may still be governed by assignment agreements entered into before September 16, 2012, drafters should now begin inserting a provision allowing universities to unilaterally file patent applications after Patent Reform takes effect. As discussed, before Patent Reform's enactment, every inventor applying for a patent was required to personally submit an oath declaring her belief of being the original and first inventor.[270] While an assignee could submit the application, the assignee could do so only in very limited circumstances and

---

264. *Id.*

265. *Id.*

266. *See supra* Part VI.B (explaining that Patent Reform will allow assignees to unilaterally file patent applications and to be granted patents as the true party in interest to the inventions).

267. *See supra* Part VI.A (discussing current standards for patent assignments).

268. *See, e.g.*, FilmTec Corp. v. Allied-Signal, Inc., 939 F.2d 1568, 1572 (Fed. Cir. 1991) (stating that, had an inventor assigned his rights to his employer for inventions made during his employ, he could not later assign them to a third party).

269. *See, e.g.*, MASS. INST. OF TECH., AGREEMENT, *supra* note 247 (using language identical to the sample provision).

270. 35 U.S.C. § 115 (1994) (current version at 35 U.S.C. § 115 (2006)), *amended by* Leahy-Smith America Invents Act, Pub. L. No. 112-29, sec. 4, § 115, 125 Stat. 284, 293–95 (2011) (to be codified at 35 U.S.C. § 115).

only on the inventor's behalf.[271] If granted, the patent could only be granted to the inventor.[272]

Patent Reform, however, seems to have changed all that.[273] Since September 16, 2012, assignees are now able to include an inventor's required oath or declaration in the pre-invention assignment agreement itself, as opposed to submitting the oath as a separate statement accompanying each individual patent application.[274] Assignees are then permitted to unilaterally file patent applications on any inventions subject to such assignment agreements without permission or further contribution from the inventor.[275] For assignees to do so, however, pre-employment assignment agreements must include the necessary declarations from the inventor.[276] According to Patent Reform, an inventor must declare that he or she is the original inventor and that the patent application either was made or was authorized to be made by the inventor.[277] While no regulations have yet been promulgated to identify specific requirements for the declaration, by including the following provision in the assignment agreement, university assignees should maintain their ability to unilaterally file patent applications and patents on inventions to which they have been assigned rights:[278]

> I declare and believe myself to be the original inventor or author, or an original joint inventor or joint author, of any such Intellectual Property and authorize [insert university here] to make and submit any applications for patent, copyright, or trademark on such Intellectual Property with my understanding that [insert university here] is the real party in interest to such Intellectual Property and that the Director will grant any patents on such Intellectual Property to [insert university here] as such.[279]

B. Prevent Bona Fide Subsequent Purchasers

Beyond ensuring proper assignments, universities should also contractually prevent later divestiture of rights by an inventor's subsequent

---

271. 35 U.S.C. § 118 (2000) (current version at 35 U.S.C. § 118 (2006)), *amended by* Leahy-Smith America Invents Act, Pub. L. No. 112-29, sec. 4, § 115, 125 Stat. 284, 296–97 (2011) (to be codified at 35 U.S.C. § 118).

272. *Id*.

273. *See* SCHACHT & THOMAS, *supra* note 201, at 13 (describing changes in the assignee filing under the Leahy-Smith America Invents Act).

274. Leahy-Smith America Invents Act, Pub. L. No. 112-29, sec. 4, § 115(e), 125 Stat. 284, 294 (2011) (to be codified at 35 U.S.C. § 115(e)).

275. *Id*. § 118.

276. *Id*. § 115(e).

277. *Id*. § 115(b).

278. Note that USPTO regulations, when promulgated, will likely require significant additional information. The USPTO's existing oath or declaration form valid under the Patent Act requires the submitted form to contain the inventor's full name and country of citizenship. USPTO Rules on Oath or Declaration, 37 C.F.R. § 1.63(a) (2012). Further, regulations require the form to identify the patent application being assigned, state that the person making the oath has reviewed and understands the patent application, and additionally state that the person making the oath acknowledges the duty to disclose relevant information to the USPTO. *Id*. § 1.63(b).

279. Based on Leahy-Smith America Invents Act § 115(b) and the USPTO Rules on Oath or Declaration, 37 C.F.R. § 1.63 (2012).

assignment to a third party. As discussed in *Stanford v. Roche*, a university's assigned intellectual property rights may be terminated unilaterally by an individual inventor through a separate, subsequent assignment agreement with a third party.[280] Under *FilmTec*, if an inventor assigns its rights to a third party purchaser in contravention of an existing university assignment agreement for value and without notice of the university's outstanding equitable claim or title, the third party purchaser acquires full title to the patent free from any encumbrances.[281] Further, 35 U.S.C. § 261 expands and makes more stringent the effects of inconsistent assignments to multiple parties.[282] First, under § 261, a bona fide purchaser for value voids any prior assignment of rights if that prior assignee, in this case a university, fails to record the prior assignment in the Patent and Trademark Office within three months from the date of the assignment or prior to the date of the subsequent bona fide purchase.[283] Second, whereas the common law *FilmTec* rule operated to divest only equitable titleholders of their rights, Section 261 may operate to divest the prior assignee, i.e. the university, of full title.[284]

Therefore, universities should draft assignments to mitigate the risk of subsequent assignments. Section 261 operates to divest universities of their assigned rights only when the subsequent purchaser pays valuable consideration for an invention and when the subsequent purchaser had no notice of any prior assignment.[285] Therefore, university pre-invention assignment agreements should secure the inventor's agreement not to enter into any other agreements or incur any obligations on the intellectual property being assigned.[286] A sample provision follows:

> I will not, while bound by this Agreement, enter into any other agreements, or otherwise incur any obligations, that conflict with the foregoing.[287]

As will be discussed below, however, obtaining and recording confirmatory assignments on its researchers' inventions are the most important steps universities can take to prevent divestment by subsequent purchasers.

---

280. Bd. of Trs. of the Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc., 131 S. Ct. 2188, 2199–200 (2011) (Breyer, J., dissenting) ("[A] federal contractor university's statutory right under the Bayh-Dole Act . . . in inventions arising from federally funded research can be terminated unilaterally by an individual inventor through a separate agreement purporting to assign the inventor's rights to a third party." (internal citation omitted)).

281. FilmTec Corp. v. Allied-Signal, Inc., 939 F.2d 1568, 1573–74 (Fed. Cir. 1991).

282. 35 U.S.C. § 261 (2006); *see FilmTec*, 939 F.2d at 1573–74 (explaining how a purchaser of a patent can be "entitled to the protections of § 261").

283. 35 U.S.C. § 261 ("An assignment, grant or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice, unless it is recorded in the Patent and Trademark Office within three months from its date or prior to the date of such subsequent purchase or mortgage."); *FilmTec*, 939 F.2d at 1573–74.

284. *FilmTec*, 939 F.2d at 1573–74.

285. 35 U.S.C. § 261.

286. *See, e.g.*, MASS. INST. OF TECH., AGREEMENT, *supra* note 247.

287. *Id*.

C. Establish the University as a Bona Fide Subsequent Purchaser

The rules on bona fide subsequent purchasers may not always inure to the university's disadvantage. Universities should consider drafting provisions as a part of their pre-invention assignment agreements that establish the university as a bona fide subsequent purchaser of any inventions conceived of elsewhere but reduced to practice or patented at the university. While universities certainly have no claim to inventions conceived of *and* reduced to practice at other institutions, universities may claim inventions conceived at other institutions but first reduced to practice at the university.[288] As discussed, a separate assignment agreement assigning an invention to a third party may terminate a prior assignee's intellectual property rights.[289] Universities should, therefore, consider positioning themselves as those third parties. By operation of 35 U.S.C. § 261, a university that provides valuable consideration for its incoming inventors' pre-conceived inventions without notice of any outstanding assignments to other institutions voids any prior assignments and acquires full title to such inventions.[290] Pre-invention assignment agreements, therefore, should contain provisions identifying the consideration provided to university inventors in return for their research and the university's lack of notice as to any outstanding assignments, grants, or conveyances of the inventor's works.[291]

1. Establish Consideration

Like any contract, a pre-invention assignment agreement must constitute a bargained for exchange between the university and the inventor. Consideration provided by the university may vary depending on the type of inventor entering into the assignment agreement, but some combination of the following three forms of consideration will generally be included: 1) employment with the university; 2) the opportunity to perform research at the university; and 3) the opportunity to use the university's funds, facilities, and other resources.[292] Assignment agreements should then provide that the inventor, in exchange for this valuable consideration, agrees to the various

288. Although the Court in *Stanford v. Roche* criticized the possibility that a university could gain title to inventions conceived elsewhere, the Court did not explicitly prohibit such acquisitions. Bd. of Trs. of the Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc., 131 S. Ct. 2188, 2198–99 (2011). Instead, the Court held simply that the Bayh-Dole Act did not operate to automatically grant universities title to inventions conceived elsewhere but reduced to practice at the university. *Id*. The option, therefore, to contract for such assignment of rights may still be open.

289. *Id*. at 2199–200 (Breyer, J., dissenting) (criticizing the majority's holding in the case because it may allow "a federal contractor university's statutory right under the Bayh-Dole Act . . . in inventions arising from federally funded research [to] be terminated unilaterally by an individual inventor through a separate agreement purporting to assign the inventor's rights to a third party." (internal citations omitted)).

290. Rhone-Poulenc Agro, S.A. v. DeKalb Genetics Corp., 284 F.3d 1323, 1327 (Fed. Cir. 2002); FilmTec Corp. v. Allied-Signal, Inc., 939 F.2d 1568, 1573–74 (Fed. Cir. 1991).

291. *See, e.g.*, MASS. INST. OF TECH., AGREEMENT, *supra* note 247 (containing provisions identifying the consideration provided to university inventors and the university's lack of notice as to any outstanding assignments, grants, or conveyances of the inventor's works).

292. *See, e.g.*, *id.* (containing provisions identifying the three types of consideration that will generally be provided to the inventor).

provisions discussed throughout this comment.[293] Sample provisions establishing a bargained for exchange for university employees, students, and visiting inventors without outstanding sponsored research agreements follow here.

a. University Employees and Students

Drafters should consider using the following provision for assignment agreements with university employees and students:

This agreement is made in consideration of the following:

- my continuing or anticipated employment at [insert university here]; and/or
- my performance of research at [insert university here]; and/or
- opportunities made or to be made available to me to use [insert university here]'s funds, facilities, or other resources.

In exchange for the consideration listed above:

[insert the remainder of the agreement provisions here][294]

b. Visiting Inventors Not Subject to Collaborative Research Agreements

Drafters should consider using the following provision for assignment agreements with visiting inventors not subject to collaborative research agreements:

This agreement is made in consideration of the following:

- my performance of research at [insert university here]; and/or
- opportunities made or to be made available to me to use [insert university here]'s funds, facilities or other resources.

In exchange for the consideration listed above:

[insert the remainder of the agreement provisions here][295]

2. Establish Lack of Prior Agreements or Obligations to Third Parties

To position themselves as potential bona fide § 261 purchasers, universities should also include provisions establishing the university's lack of notice of any undisclosed prior assignment agreements. As discussed, to gain full title and void any prior inventor assignments to pre-conceived inventions, the university must not have been put on notice of an inventor's outstanding obligations regarding her inventions.[296] By requiring inventors to disclose any

293. *See, e.g.*, *id.* (containing a provision stating that the inventor agrees to all the provisions in the agreement generally).

294. *Id.*

295. MASS. INST. OF TECH., AGREEMENT FOR VISITING SCIENTIST, *supra* note 253.

296. *See* 35 U.S.C. § 261 (2006) (describing the ownership and assignment of patents); Rhone-Poulenc

prior agreements on their inventions, the university creates a finite list to which they cannot claim exclusive rights under 35 U.S.C. § 261.[297] This also means, however, that anything not on the list remains available for subsequent purchase under Section 261. A sample provision requiring inventors to disclose any outstanding agreements and to declare that no other outstanding agreements exist follows:

> I represent that, except as identified on pages attached hereto, I have not executed any agreements with or incurred any obligations to others in conflict with the foregoing.[298]

D. Submit Confirmatory Assignment To USPTO Immediately

Pre-invention contractual provisions can only be so effective. To avoid divestiture by inventors' inconsistent assignments, universities should first and foremost record pre-invention assignment agreements with the USPTO. As mentioned, university assignees must record the assignment with the Patent and Trademark Office within three months from the date of the assignment or prior to the date of the subsequent bona fide purchase.[299] Further, universities should obtain and record confirmatory assignments of individual inventions once actually conceived or reduced to practice.

VIII. PRE-INVENTION ASSIGNMENT AGREEMENTS FOR VISITING INVENTORS SUBJECT TO COLLABORATIVE RESEARCH AGREEMENTS

Uncertainty of title and the importance of writing clear assignment agreements become even more apparent in collaborative research agreements between multiple institutions.[300] Collaborative research increases as technological advances require innovation at levels single inventors and institutions cannot achieve alone.[301] However, with increased input from multiple inventors, the disposition of intellectual property rights becomes more complicated.[302]

Agro, S.A. v. DeKalb Genetics Corp., 284 F.3d 1323, 1327 (Fed. Cir. 2002) ("Section 261 provides that a later bona fide purchaser for value without notice (a later assignee) prevails if the earlier assignment was not timely recorded in the patent office."); FilmTec Corp. v. Allied-Signal, Inc., 939 F.2d 1568, 1573–74 (Fed. Cir. 1991) (stating that without notice of outstanding equitable claim or title, "a legal title holder of a patent transfers his or her title to a third party purchaser").

297. *See generally* 35 U.S.C. § 261 (2006) (describing the ownership and assignment of patents).

298. MASS. INST. OF TECH., AGREEMENT, *supra* note 247.

299. 35 U.S.C. § 261 (2006) ("An assignment, grant or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice, unless it is recorded in the Patent and Trademark Office within three months from its date or prior to the date of such subsequent purchase or mortgage."); *FilmTec Corp.*, 939 F.2d at 1573–74.

300. Aaron S. Kesselheim & Rahul Rajkumar, *Who Owns Federally Funded Research? The Supreme Court and the Bayh-Dole Act*, 365 NEW ENG. J. MED. 1167, 1168 (2011).

301. Dreyfuss, *supra* note 224, at 1216–17.

302. *See, e.g.*, *id.* ("[In the Second Circuit] there are apparently multi-authored works that are not for hire because of the absence of an employment contract, agency relationship, or written commission, which are also not joint works because one participant lacked the intent to share the attributes of authorship with others. These works fall into what might be called 'the Larson gap,' where their legal status is indeterminate.").

A. Additional Issues In Collaborative Research Agreements

As discussed, the Patent Act requires all applications to be made by inventors and in the inventors' names.[303] The Patent Act also requires that when two or more people invent jointly, they must apply for patent protection jointly.[304] Joint inventors must submit applications jointly regardless of whether or not they physically worked together, contributed disparately to the inventions, or did not contribute to the subject matter of every claim.[305] Since September 16, 2012, Patent Reform now allows assignees, e.g., universities, to include all inventors' required oaths or declarations within the pre-invention assignment agreements.[306] Assignees are then permitted to unilaterally file patent applications on any inventions subject to such assignment agreements without permission or further contribution from any of the joint inventors.[307]

However, U.S. patent law alone can govern only inventions arising from purely domestic collaborations. The case is not so simple in international collaborations.[308] Inventors party to international research agreements often have conflicting obligations under each institution's assignment agreements or each country's laws on disposition of intellectual property rights. While many countries' intellectual property laws no longer grant academic researchers discretion as to whether to publish inventions or to seek patent protection, i.e., the professor's privilege, new foreign laws are likely to create problems for American universities engaged in collaborative research agreements.[309]

Inter-institutional and international collaborations implicate various laws and assignment agreements that grant inventors or assignees full rights to exploit their inventions, often in contravention of one another.[310] Every joint inventor—and often every joint-assignee—has the right to fully exploit a mutual invention without accountability to other joint inventors.[311] For

---

303. 35 U.S.C. § 115 (1998) ("The applicant shall make oath that he believes himself to be the original and first inventor of the process, machine, manufacture, or composition of matter, or improvement thereof, for which he solicits a patent . . . .").

304. 35 U.S.C. § 116 (2002) ("When an invention is made by two or more persons jointly, they shall apply for patent jointly and each make the required oath, except as otherwise provided in this title.").

305. *Id*. ("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.").

306. Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 115(e), 125 Stat. 284 (2011).

307. *Id*. § 118.

308. *See supra* Part VII.

309. David C. Mowery & Bhaven N. Sampat, *The Bayh-Dole Act of 1980 and University-Industry Technology Transfer: A Model for Other OECD Governments?*, 30 J. TECH. TRANSFER 115, 123 (2005). For example, a 1999 Denmark law gave public research organizations full rights to all inventions funded by Denmark's Ministry for Research and Technology. *Id*. A 1999 French law authorized creation of technology transfer offices at French universities, and in 2001 the French Ministry of Research recommended that universities and public research organizations establish policies to claim exclusive rights to their employee's inventions. *Id*. In 1999, the Canadian Prime Minister's Expert Panel on the Commercialization of University Research recommended that universities retain ownership of federally funded inventions to stimulate a shift in Canadian research culture similar to the shift in American research institutions after passage of the Bayh-Dole Act in 1980. *Id*. The United Kingdom, Austria, Finland, Norway, Japan, and Korea all have legislation either enacted or under debate that would grant universities patent rights to federally funded inventions. *Id*.

310. Dreyfuss, *supra* note 224, at 1210–11.

311. *Id*. at 1211–12.

example, joint inventors have the right to assign patents to others.[312] Similarly, enforcement actions require all patentees' participation, and courts often hesitate to join absent patentees as involuntary plaintiffs.[313] American universities party to international collaborations run the very real risk of losing rights to their patents by function of inconsistent laws or agreements.

Under the Bayh-Dole Act as understood before *Stanford v. Roche*, federally funded technologies were presumptively, and by operation of law, owned by the federal contractor.[314] So, agreements or other laws from foreign countries that might have impacted ownership by a joint inventor were largely inconsequential.[315] The Bayh-Dole Act would have trumped such claims because ownership automatically vested in the federal contractor by the Act's operation.[316] Now, after *Stanford v. Roche*, title no longer vests in federal contractors automatically.[317] Governing laws and agreements from other countries must be considered initially to determine inventors' ownership rights and whether inventions can even be assigned to the federal contractor.[318] An international intellectual property law which vests full title to inventions in, for example, foreign inventors or a foreign government would likely pre-empt any assignment agreement between the collaborative inventors and an American university. Therefore, domestic inventors may have no rights in federally funded inventions, and if rights to inventions developed using federal funding cannot be assigned, federal contractors may not be permitted to accept federal funding at all.

In many cases, contractually specifying which collaborator's domestic laws will take precedence in the event of a conflict may be the most effective way to manage the thicket of issues accompanying international collaborations.[319] By contracting for choice of law before entering into any collaborative research agreement, all parties are given fair notice of what rules and regulations will govern disposition of intellectual property rights to collaborative inventions relying in part on federal funding.[320] Disclosure and clarity are paramount. Federal contractors should always consult available counsel and consult online resources for recent regulatory updates.[321] Overall, it is crucial for federal contractors to work closely with visiting researchers and their international institutions to set expectations and ensure compliance with chosen law *before* a conflict emerges.[322] Only once all collaborators have

312. *Id*. at 1212.

313. *Id*.

314. *See supra* Part III.

315. *See generally* MELISSA S. ANDERSON, *International Research Collaborations: Anticipating Challenges Instead of Being Surprised*, *in* 61 EUROPA WORLD OF LEARNING 14 (2011).

316. *Id*.

317. *See supra* Part V.

318. *See* Mark A. Bohnhorst et al., *Legal and Regulatory Considerations in International Research Collaborations*, *in* INTERNATIONAL RESEARCH COLLABORATIONS: MUCH TO BE GAINED, MANY WAYS TO GET IN TROUBLE, 79, 92–93 (Melissa S. Anderson & Nicholas H. Steneck eds., 2011) ("It is critical that [scientists] . . . generally be aware of the legal and regulatory issues to which their work may be subject.").

319. *See generally* Anderson, *supra* note 315.

320. *Id*.

321. Bohnhorst et al., *supra* note 318, at 92–93.

322. *See id*. (discussing best practices for scientists embarking on an international research project).

agreed to the terms of a collaborative research agreement, perhaps with a choice of law provision, should the parties feel free to enter into assignment agreements that comply with the chosen legal framework. Ultimately, because collaborative agreements require significant compromise, it is critical for universities entering into research agreements with other institutions or those institutions' inventors to create fair and reasonable inventor assignment agreements.

B. Require Disclosure and Automatic Assignment to Collaborators

Pre-invention assignment agreements must be modified to account for collaborative efforts between universities and other institutions. Provisions granting automatic assignment to universities, requiring inventors to disclose the record of their inventions, and requiring inventors to assist in obtaining the university's patent rights must all be modified to account for the rights and obligations of third party institutions and inventors. In creating these provisions, drafters must be careful to balance fairness to other institutions with the university's interest in protecting its own exclusive rights. This section describes these considerations and suggests some sample assignment provisions for universities to consider in drafting their pre-employment assignment agreements.

1. Unequivocally and Automatically Grant Rights

The basic approach to creating assignment agreements for inventors party to inter-institutional collaborative research agreements remains largely the same as the approach discussed above in Part VII.A. Drafters should ensure assignment agreements explicitly assign employee inventions to employers using the "do hereby assign" language consistent with *Stanford v. Roche*.[323] In addition, drafters should broadly identify the moments at which the inventor's affirmative, automatic assignment takes effect consistent with *FilmTec*.[324] Beyond these basic strategies, however, universities must balance fairness to their collaborating institutions with their own interests in protecting their rights to federally funded inventions. Out of fairness, universities should provide for joint assignments to all institutions party to a research agreement, but to protect the university's interests, assignment agreements must also maximize the categories of inventions assignable exclusively to the university.

Universities should be clear that two categories of assigned inventions exist: 1) technologies invented jointly under an inter-institutional research agreement; and 2) technologies either solely or jointly invented outside of an

323. *See, e.g.*, Bd. of Trs. of Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc., 131 S. Ct. 2188, 2199 (2011) ("[U]niversities typically enter into agreements with their employees requiring the assignment to the university of rights in inventions. With an effective assignment, those inventions—if federally funded—become 'subject inventions' under the Act, and the statute as a practical matter works pretty much the way Stanford says it should.").

324. Filmtec Corp. v. Allied-Signal, Inc., 939 F.2d 1568, 1572–73 (Fed. Cir. 1991); *see* MASS. INST. OF TECH., AGREEMENT, *supra* note 247 (showing an example of a recommended draft).

inter-institutional research agreement but still using university resources or funds.[325] In short, the university should draft provisions that grant the university and the collaborating institution joint rights *only* to inventions created pursuant to the collaborative research agreement.[326] All other inventions made, either solely or jointly, using university resources or funds should be granted exclusively to the university at which they were created.[327] Sample provisions clearly assigning intellectual property rights based on this distinction follow:

> I will assign, and do hereby assign, jointly to [insert university here] and my Employer, all rights to all inventions, copyrightable materials, computer software, semiconductor mask works, tangible research property, and trademarks ("Intellectual Property") conceived, invented, reduced to practice, or authored by me, either:
>
> 1. jointly with employees or students of [insert university here] in the course of or pursuant to sponsored research or other agreement in which I am a participant; or
> 2. solely or jointly with others in the performance of the research defined under the Sponsored Research Agreement with significant use of [insert university here] administered funds or [insert university here] facilities.[328]
>
> Please note that inventions previously conceived, even though a patent application has been filed or a patent issued, are subject to this Agreement if they are actually first reduced to practice under the circumstances included in this paragraph:[329]
>
> I will . . . assign . . . and do hereby assign[,] to [insert university here] all rights to all Intellectual Property conceived, invented, authored, or reduced to practice by me, either solely or jointly with others, other than in the performance of the research defined under the Sponsored Research Agreement, which result from my own or my co-inventor's/co-author's significant use of [insert university here] administered funds or [insert university here] facilities . . . . [P]lease note that inventions previously conceived, even though a patent application has been filed or a patent issued, are subject to this Agreement if they are actually first reduced to practice under the circumstances included in [this] [p]aragraph . . . .[330]

2. *Create and Disclose a Detailed Record of Developments as They Occur*

Assignment provisions requiring inventor record keeping and invention disclosure in collaborative inventions should also remain nearly identical to agreements discussed in Part VIII.B.2 for single-institution inventions. Out of

---

325. *See* MASS. INST. OF TECH., AGREEMENT FOR VISITING SCIENTIST, *supra* note 253 (demonstrating an example of an agreement for a visiting scientist).

326. *See id.* (showing a drafted agreement containing these limiting provisions).

327. *See id.* (showing a drafted agreement containing an example of suggested language).

328. *Id*.

329. *Id*.

330. *Id*. at (A), (E)(ii).

fairness, university assignment agreements should require researchers to provide their employers with records of their advancements, but only when necessary. Similarly, university agreements should require inventors to return university materials at the end of their engagement. By requiring researchers to maintain timely records of conception, reduction to practice, and developments in general, universities and their collaborators create a record useful in procuring and enforcing rightful ownership of such inventions.[331] Sample provisions follow:

> I will promptly report and fully disclose the conception and/or reduction to practice of any potential Intellectual Property to [insert university here], or to [insert university here] and my Employer, as applicable, [and] will prepare and maintain for [insert university here][,] or for [insert university here] and my Employer, as applicable, adequate and current written records of all such Intellectual Property.[332]
>
> I will deliver promptly to [insert university here] when I leave [insert university here] for whatever reason, and at any other time as [insert university here] may request, copies of all written records . . . as well as all related memoranda, notes, records, schedules, plans or other documents, and tangible research property made by, compiled by, delivered to, or manufactured, used, developed or investigated by [me or] [insert university here], which will at all times be the property of [insert university here].[333]

3. *Ensure Prompt Application for Patents*

Regardless of the existence of a collaborative research agreement, universities should make efforts to ensure that their inventions are actually patented.[334] Inventors, regardless of institutional affiliation, are crucial to the patenting process, and as such, universities should include a provision requiring university inventors to assist the university in obtaining, maintaining, and enforcing the university's rights to assigned inventions. It is in the university's best interest for an assignment agreement to obligate inventors to assist the university with the steps only inventors can complete, i.e., providing the inventor's declaration and submitting the actual patent application.[335] Further, universities should contract for inventors' assistance in maintaining and enforcing the university's rights even if they are no longer affiliated with the university.[336] It is probably unnecessary, however, for university assignment agreements to obligate collaborative inventors to assist other institutions in obtaining or enforcing their jointly assigned rights in joint inventions. Collaborating institutions should independently contract for

331. See *supra* Parts IV on *FilmTec* and III on Bayh-Dole.

332. MASS. INST. OF TECH., AGREEMENT FOR VISITING SCIENTIST, *supra* note 253 at D; Form, University of California, *supra* note 252.

333. MASS. INST. OF TECH., AGREEMENT FOR VISITING SCIENTIST, *supra* note 253 at E.

334. *See supra* Parts IV, V.

335. *See supra* Part VI.A.

336. MASS. INST. OF TECH., AGREEMENT FOR VISITING SCIENTIST, *supra* note 253 at B.

inventors' assistance. A sample provision obligating inventors to assist universities in obtaining, maintaining, and enforcing the university's intellectual property rights both during and subsequent to the inventor's affiliation with the university follows:

> I will execute all necessary papers and otherwise provide proper assistance, promptly upon [insert university here]'s request and at [insert university here]'s or my Employer's expense, during and subsequent to [the period of my] [insert university here] [affiliation,] to enable [insert university here] to obtain, maintain, or enforce for [itself] or [its] nominees . . . patents, copyrights, [trademarks] or other legal protection for such Intellectual Property.[337]

4. Allow Contractors and Employers to Unilaterally File Patent Applications

As discussed in Part VII.A.4, because patent applications filed after Patent Reform takes effect are still governed by assignment agreements entered into before September 16, 2012, drafters should now begin inserting a provision allowing universities to unilaterally file patent applications. Since September 16, 2011, assignees are now able to include inventors' required oaths or declarations within the pre-invention assignment agreement and are then permitted to unilaterally file patent applications on any inventions subject to such assignment agreements without permission or further contribution from the inventors.[338] In joint inventorship situations, however, joint assignees, i.e. the university and its collaborators, must be certain to include the necessary declarations from all joints inventors.[339] Further, out of fairness, university assignment agreements should provide that not only the university, but also the collaborative institution, should be considered real parties in interest to the eventual patent rights. A sample provision allowing the university and its collaborators to file patent applications on their researchers' inventions follows:

> I declare and believe myself to be the original inventor or author, or an original joint inventor or joint author, of any such Intellectual Property and authorize [insert university here] and my Employer to jointly make and submit any applications for patent, copyright, or trademark on such Intellectual Property with my understanding that [insert university here] and my Employer are the real parties in interest to such Intellectual Property and that the Director will grant any patents on such Intellectual Property to [insert university here] as such.[340]

---

337. MASS. INST. OF TECH., AGREEMENT FOR VISITING SCIENTIST, *supra* note 253 at C.

338. Leahy-Smith America Invents Act, Pub. L. No. 112-29, sec. 4, §§ 115(e), 118, 125 Stat. 284, 294, 296 (2011).

339. *Id*. § 115(e).

340. *Id.* § 115(b); USPTO Rules on Oath or Declaration, 37 CFR § 1.63 (2012).

IX. CONCLUSION

While inventors and patent purists may take issue with employment agreements designed specifically to divest inventors of their own creations, it is critical to view such agreements through the lens of the Bayh-Dole Act and the problems it was designed to address. Congress enacted the Bayh-Dole Act to spark private industry innovation by granting federal contractors sole rights to their employee's federally funded technologies.[341] And for thirty years, it worked. The courts in *FilmTec* and *Stanford v. Roche*, however, threatened to undermine that success.[342] The techniques suggested in this Article do not seek divestiture of inventors' rights simply for divestiture's sake. These techniques are designed to effectuate Congress's purpose where the Supreme Court has failed to do so. By protecting their intellectual property rights through effective contracts, universities and private industry can afford continued investment in America's technological future.

341. *See supra* Part II.
342. *See supra* Parts IV, V.

Appendix
Sample Agreements

This appendix combines the various assignment provisions discussed throughout this comment into coherent assignment agreements for 1) university employees and students; 2) visiting researchers with no third party sponsored research agreements; and 3) visiting researchers subject to collaborative research agreements.[343]

A. University Employees and Students

This agreement is made in consideration of the following:

- my continuing or anticipated employment at [insert university here]; and/or
- my performance of research at [insert university here]; and/or
- opportunities made or to be made available to me to use [insert university here]'s funds, facilities or other resources.

In exchange for the consideration listed above:

A. I will assign, and do hereby assign, to [insert university here] all rights to all inventions, copyrightable materials, computer software, semiconductor mask works, tangible research property, and trademarks ("Intellectual Property") conceived, invented, reduced to practice, or authored by me, either solely or jointly with others, which:
   1. are developed in the course of or pursuant to a sponsored research or other agreement in which I am a participant; or
   2. result from the significant use of [insert university here] administered funds or [insert university here] facilities; or
   3. result from a work-for-hire funded by [insert university here].

B. Please note that inventions previously conceived, even though a patent application has been filed or a patent issued, are subject to this Agreement if they are actually first reduced to practice under the circumstances included in this paragraph.

C. I will promptly report and fully disclose the conception and/or reduction to practice of any potential Intellectual Property to [insert university here] and will prepare and maintain for [insert university here] adequate and current written records of all such Intellectual Property.

D. I will deliver promptly to [insert university here] when I leave [insert university here] for whatever reason, and at any other time as [insert university here] may request, copies of all written records as well as all related memoranda, notes, records, schedules, plans or other documents, and tangible research property made by, compiled by,

343. Note, like many of the assignment provisions throughout this Article, these sample agreements are based largely on MIT assignment agreements provided publicly at MIT Technology Licensing Office, *Download Forms*, MIT TLO, http://web.mit.edu/tlo/www/misc/forms.html#IPIA (lasted visited Sept. 11, 2012).

delivered to, or manufactured, used, developed or investigated by me or [insert university here], which will at all times be the property of [insert university here].

E. I will execute all necessary papers and otherwise provide proper assistance, promptly upon [insert university here]'s request and at [insert university here]'s expense, during and subsequent to the period of my [insert university here] affiliation, to enable [insert university here] to obtain, maintain, or enforce for itself or its nominees, patents, copyrights, trademarks or other legal protection for such Intellectual Property.

F. I declare and believe myself to be the original inventor or author, or an original joint inventor or joint author, of any such Intellectual Property and authorize [insert university here] to make and submit any applications for patent, copyright, or trademark on such Intellectual Property with my understanding that [insert university here] is the real party in interest to such Intellectual Property and that the Director will grant any patents on such Intellectual Property to [insert university here] as such.

Furthermore, I represent that, except as identified on pages attached hereto: (i) I have not executed any agreements with or incurred any obligations to others in conflict with the foregoing; and (ii) I will not, while bound by this Agreement, enter into any other agreements, or otherwise incur any obligations, that conflict with the foregoing.

B. Visiting Researchers with no Third Party Sponsored Research Agreement

This agreement is made in consideration of the following:

- my performance of research at [insert university here]; and/or
- opportunities made or to be made available to me to use [insert university here]'s funds, facilities or other resources.

In exchange for the consideration listed above:

A. I will assign, and do hereby assign, to [insert university here] all rights to all inventions, copyrightable materials, computer software, semiconductor mask works, tangible research property, and trademarks ("Intellectual Property") conceived, invented, reduced to practice, or authored by me, either solely or jointly with others, which:
   1. are developed in the course of or pursuant to a sponsored research or other agreement in which I am a participant; or
   2. result from the significant use of [insert university here] administered funds or [insert university here] facilities.

B. Please note that inventions previously conceived, even though a patent application has been filed or a patent issued, are subject to this Agreement if they are actually first reduced to practice under the circumstances included in this paragraph.

C. I will promptly report and fully disclose the conception and/or reduction to practice of any potential Intellectual Property to [insert university here] and will prepare and maintain for [insert university here] adequate and current written records of all such Intellectual Property.

D. I will deliver promptly to [insert university here] when I leave [insert university here] for whatever reason, and at any other time as [insert university here] may request, copies of all written records as well as all related memoranda, notes, records, schedules, plans or other documents, and tangible research property made by, compiled by, delivered to, or manufactured, used, developed or investigated by me or [insert university here], which will at all times be the property of [insert university here].

E. I will execute all necessary papers and otherwise provide proper assistance, promptly upon [insert university here]'s request and at [insert university here]'s expense, during and subsequent to the period of my [insert university here] affiliation, to enable [insert university here] to obtain, maintain, or enforce for itself or its nominees, patents, copyrights, trademarks or other legal protection for such Intellectual Property.

F. I declare and believe myself to be the original inventor or author, or an original joint inventor or joint author, of any such Intellectual Property and authorize [insert university here] to make and submit any applications for patent, copyright, or trademark on such Intellectual Property with my understanding that [insert university

here] is the real party in interest to such Intellectual Property and that the Director will grant any patents on such Intellectual Property to [insert university here] as such.

Furthermore, I represent that, except as identified on pages attached hereto: (i) I have not executed any agreements with or incurred any obligations to others in conflict with the foregoing; and (ii) I will not, while bound by this Agreement, enter into any other agreements, or otherwise incur any obligations, that conflict with the foregoing.

C. Visiting Researchers with Third Party Sponsored Research Agreement

This agreement is made in consideration of opportunities made or to be made available to me to use [insert university here]'s funds, facilities or other resources.

In exchange for the consideration listed above:

A. I will assign, and do hereby assign, jointly to [insert university here] and my Employer, all rights to all inventions, copyrightable materials, computer software, semiconductor mask works, tangible research property, and trademarks ("Intellectual Property") conceived, invented, reduced to practice, or authored by me, either:
   1. jointly with employees or students of [insert university here] in the course of or pursuant to sponsored research or other agreement in which I am a participant; or
   2. solely or jointly with others in the performance of the research defined under the Sponsored Research Agreement with significant use of [insert university here] administered funds or [insert university here] facilities.

B. Please note that inventions previously conceived, even though a patent application has been filed or a patent issued, are subject to this Agreement if they are actually first reduced to practice under the circumstances included in this paragraph.

C. I will assign, and do hereby assign, to [insert university here] all rights to all Intellectual Property conceived, invented, authored, or reduced to practice by me, either solely or jointly with others, other than in the performance of the research defined under the Sponsored Research Agreement, which result from my own or my co-inventor's/co-author's significant use of [insert university here] administered funds or [insert university here] facilities. Please note that inventions previously conceived, even though a patent application has been filed or a patent issued, are subject to this Agreement if they are actually first reduced to practice under the circumstances included in this paragraph.

D. I will promptly report and fully disclose the conception and/or reduction to practice of any potential Intellectual Property to [insert university here], or to [insert university here] and my Employer, as applicable, and will prepare and maintain for [insert university here], or for [insert university here] and my Employer, as applicable, adequate and current written records of all such Intellectual Property.

E. I will deliver promptly to [insert university here] when I leave [insert university here] for whatever reason, and at any other time as [insert university here] may request, copies of all written records as well as all related memoranda, notes, records, schedules, plans or other documents, and tangible research property made by, compiled by, delivered to, or manufactured, used, developed or investigated by me or [insert university here], which will at all times be the property of

[insert university here].

F. I will execute all necessary papers and otherwise provide proper assistance, promptly upon [insert university here]'s request and at [insert university here]'s or my Employer's expense, during and subsequent to the period of my [insert university here] affiliation, to enable [insert university here] to obtain, maintain, or enforce for itself or its nominees, patents, copyrights, trademarks or other legal protection for such Intellectual Property."

G. I declare and believe myself to be the original inventor or author, or an original joint inventor or joint author, of any such Intellectual Property and authorize [insert university here] and my Employer to jointly make and submit any applications for patent, copyright, or trademark on such Intellectual Property with my understanding that [insert university here] and my Employer are the real parties in interest to such Intellectual Property and that the Director will grant any patents on such Intellectual Property to [insert university here] as such.

Furthermore, I represent that, except as identified on pages attached hereto: (i) I have not executed any agreements with or incurred any obligations to others in conflict with the foregoing; and (ii) I will not, while bound by this Agreement, enter into any other agreements, or otherwise incur any obligations, that conflict with the foregoing.