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A GUIDE THROUGH THE Labyrinth: Evaluating and Negotiating a University Technology Transfer Deal

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I. INTRODUCTION

Historically, technology developed at universities within the United States was neither patented nor transferred to the commercial sector. In fact, policy makers traditionally adhered to the view that university technology, which is largely developed with the assistance of federal funding, was owned by the general public. However, in 1980, Congress shifted from this traditional view by enacting the Bayh-Dole Act. Under the Bayh-Dole Act, universities were, for the first time, provided Congressional authorization to patent inventions funded by federal research grants.

Over the past two decades, the Bayh-Dole Act has catalyzed the creation of numerous successful businesses. For example, both the Google and Lycos Internet search engines resulted from technology transfers from Stanford University and Carnegie Mellon University, respectively. Similarly, Taxol®, the Bristol-Meyers Squibb cancer drug that generated $1 billion in sales in 1998, resulted from a technology transfer deal with Florida State University. Since the enactment of the Bayh-Dole Act, licensing activity among American universities has increased dramatically. In 1991, the gross licensing revenues

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1 See Lawrence Rudolph, Overview of Federal Technology Transfer, 5 RISK: HEALTH SAFETY & ENV’T 133, 135 (1994).
2 See Carl L. Vackett et al., Technology Transfer, 94-12 BRIEFING PAPERS 1 (1994).
5 Id.
of American universities totaled $130 million. This rose to $172 million in 1992, $601 million in 1999, and over $1 billion in 2003. This increased licensing activity has greatly benefited the American economy. Between 1991 and 1999, 2,375 new companies were formed based upon products developed through university research. In 1999 alone, technology transfers from universities contributed $40 billion to the American economy, supported 270,000 jobs, and resulted in 417 new products.

As university technology transfer activity continues to expand, an increased number of companies have turned to universities for outsourced research and development and as suppliers of future products. Despite a growing partnership between industry and the university community, the efficiency of most technology transfer transactions and sponsored research agreements is reduced by the tension between the academic and corporate cultures present at the bargaining table. Much of this tension is caused by many universities’ and companies’ relative inexperience in negotiating technology transfer deals. Furthermore, technologies that are conceived, reduced to practice, or otherwise created at a university (each a “University Technology”) are typically protected by intellectual property laws somewhat unfamiliar to universities and subject to federal regulations somewhat unfamiliar to most potential licensees.

The purpose of this paper is to facilitate the process of commercializing University Technology and negotiating a University Technology transfer transaction (a “University Deal”) by identifying numerous legal factors that impact the commercialization process and reviewing issues that are often the

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7 Id.
10 See Kathleen A. Denis, University Licensing and Technology Transfer, 666 PLI/PAT. 317, 325 (2001).
11 See id. at 333.
12 For example, by the end of 1997, almost 10% of all university sponsored research expenditures ($1.9 billion) were funded by the private industry. See Everett M. Rogers et al., Assessing the Effectiveness of Technology Transfer Offices at U.S. Research Universities, J. ASS’N UNIV. TECH. MANAGERS 1, 6 (2000).
13 Section II of this paper provides an overview of these intellectual property laws and regulations.
subject of protracted negotiation in such deals. Section II of this paper provides an overview of the primary intellectual property and regulatory issues that should be reviewed and considered prior to entering into a University Deal. Section III of this paper provides general legal guidelines for evaluating factors that are likely to impact the success of a start-up company that is a party to a University Deal. Section IV identifies issues that are often the subject of protracted negotiations in a University Deal and that should be discussed and resolved early in such a deal.

II. INTELLECTUAL PROPERTY AND REGULATORY ISSUES IMPACTING UNIVERSITY DEALS

In order to understand the legal debates that regularly arise in negotiating University Deals, especially during the due diligence stage of a transaction, it is helpful to develop a general understanding of the intellectual property laws and federal regulations impacting a university’s ownership rights in its technology.

A. Intellectual Property

The first step in understanding intellectual property issues relevant to University Deals is to conceptually understand what is actually “transferred” in such transactions. Typically, when University Technology is assigned or licensed to a third party, both the subject matter of the technology (i.e., the physical material) and the university’s intellectual property rights in such technology are assigned or licensed. In most cases, a university will possess, or have the initial right to obtain, at least one of the following types of intellectual property rights in a University Technology: patent rights, trade secret rights, and, in more limited cases, copyrights.

This section will provide a general overview of: (i) the rights afforded to a university under patent, trade secret, and copyright laws, (ii) the process for obtaining and maintaining such rights, and (iii) the problems associated with joint ownership of such rights. At the outset, it should be noted that patent rights may be secured only through compliance with statutory application procedures, trade secrets generally arise by maintaining the secrecy of proprietary information, and copyrights arise simply by expressing a copyrightable work in a fixed medium (but may be further enhanced through statutory registration procedures). Accordingly, the type of conduct required to secure intellectual property rights in a technology will depend on the specific rights a university intends to use to protect such technology.

B. Patents

1. Creation and Scope of Right

In order for an invention to be patentable, it must (i) fall within one of
several classes of subject matter covered by the Patent Act,\textsuperscript{14} (ii) be new or novel, (iii) useful, and (iv) non-obvious to a person having ordinary skill in the art of the invention at the time it is made.\textsuperscript{15} In the United States, a party may pursue a patent in a patentable invention by filing and prosecuting a patent application with the Patent and Trademark Office. In its patent application, the inventor typically discloses the best method of practicing the invention and further defines the scope of the patent through a series of descriptions that are referred to as “claims.” If a University Technology is patented in the United States, the university will have the right to exclude others from using, selling, or offering for sale within the United States, or importing into the United States the University Technology, or (assuming the technology is a process) products made by the technology.\textsuperscript{16}

The inventor has the right to obtain a patent in his invention unless there is an agreement to the contrary.\textsuperscript{17} In the university setting, professors will typically assign the right to patent their inventions by signing an employee invention assignment agreement before commencing their employment.\textsuperscript{18} In cases where universities fail to obtain such assignments, the law is somewhat unsettled as to whether professors impliedly agree to assign their inventions to their respective universities by virtue of their occupation. In determining whether such an implied agreement to assign patents exists between a university and its professors, the Supreme Court has stated that the principal inquiry should be whether a particular professor was “hired to invent” or was employed by the university for general purposes:

One employed to make an invention, who succeeds, during his term of service, in accomplishing that task, is bound to assign to his employer any patent obtained. The reason is that he has only produced that which he was employed to invent. \textit{On the other hand, if the employment is general, albeit it covers a field of labor and effort in the performance of which the employee conceived the invention for which he obtained a patent, the}

\textsuperscript{14} See 35 U.S.C. § 101 (2000) (listing the following four categories of patentable subject matter: process, machine, manufacture, and composition of matter); see generally id. § 1.

\textsuperscript{15} See id. §§ 101-103. A patent application may only be filed on an invention that has been reduced to practice; this may be accomplished by building or using the invention or describing the invention in a manner such that, if the invention were built, it would work. See id.

\textsuperscript{16} See id. § 154.

\textsuperscript{17} See id. § 101.

\textsuperscript{18} If such an agreement is not obtained at the time a professor is hired, the university may not have the right to obtain a patent in an invention reduced to practice by the professor because courts are divided as to whether the professor’s continued employment with a university constitutes sufficient consideration to render such an assignment enforceable. See generally B. Jean Weidemier, \textit{Ownership of University Inventions}, J. ASS’N UNIV. TECH. MANAGERS 1, 8 (1992).
contract is not so broadly construed as to require an assignment of the patent.\(^{19}\)

Applying this standard, the Tenth Circuit has stated, in dicta, that professors who are hired to conduct research toward the “obtaining of patents” are likely “hired to invent.”\(^{20}\) Consistently, one court has found the existence of a technology transfer policy assigning inventions to a university persuasive in determining whether an implied agreement for the assignment of inventions existed between the university and its professors.\(^{21}\) However, the court further stated that it is generally not advisable for employers to rely on employee handbooks to create binding patent assignments with employees.\(^{22}\)

2. Maintenance of Rights

Assuming that a university has obtained the right to obtain a patent in a particular University Technology by agreement with the relevant inventors, it may often find that its academic activities related to the technology preclude it from obtaining such a patent. Under the Patent Act, if an inventor makes its invention available to the public before filing a patent for the invention, he may be barred from obtaining the patent by the “statutory bars” set forth in section 102(b) of the Act.\(^{23}\) Specifically, section 102(b) of the Patent Act provides that an invention is not patentable if it was patented or described in a “printed publication” more than one year prior to the date of the application for the patent in the United States.\(^{24}\) Similarly, under section 102(b), an invention is not patentable if it was on sale or in public use more than one year prior to the filing of a U.S. patent application.\(^{25}\) In the University context, the “printed publication” statutory bar most typically causes universities problems in patenting their inventions because publishing is an integral component of academic life. Accordingly, a university should develop an understanding of the types of “printed publications” that can bar a university from obtaining a patent for an invention.

A publication does not need to be “printed,” in the traditional sense of the word, for the “printed publication” statutory bar to apply.\(^{26}\) In fact, courts have


\(^{22}\) See id. at 1224.


\(^{24}\) Id.

\(^{25}\) Id.

held that microfilm,\textsuperscript{27} slides and drawings,\textsuperscript{28} and photographs\textsuperscript{29} are printed publications within the meaning of section 102(b) of the Patent Act. In evaluating whether a form of communication constitutes a “printed publication” for purposes of section 102(b), courts generally consider whether the communication is “enabling”\textsuperscript{30} and whether it is disseminated or accessible to the public. Applying these principles, the District of New Jersey has held that a doctor’s slide show presentation describing an artificial knee invention to thirty persons at a medical meeting did not constitute a “printed publication.”\textsuperscript{31} The court found that the presentation, which was not accompanied by handouts, was limited in duration and therefore did not enable persons of ordinary skill in the art to make or use the artificial knee.\textsuperscript{32} In contrast, the Federal Circuit has ruled that a professor’s detailed oral description of his invention to a large group of scientists at an academic conference constituted a “printed publication” because the professor provided the head of the conference with a copy of his paper and provided additional copies of his paper without any accompanying restrictions to six conference attendees.\textsuperscript{33} In so holding, the Federal Circuit reasoned that the combination of the professor’s oral presentation and the distribution of a related paper provided those skilled in the art of the invention with enough information to reproduce the professor’s work.\textsuperscript{34}

Applying the above principles, some courts have found that documents that were not actually publicly disseminated but that were publicly accessible constituted “printed publications” within the meaning of section 102(b). For example, courts have repeatedly reviewed the issue of whether a “thesis” or other academic articles constitute “printed publications.” In general, a thesis will only constitute a “printed publication” if it is shelved\textsuperscript{35} and indexed in a meaningful way.\textsuperscript{36} In applying this standard, the Federal Circuit has ruled that theses organized on index cards by student name, and not by topic, are not

\begin{itemize}
\item \textsuperscript{27} See I.C.E. Corp. v. Armco Steel Corp., 250 F. Supp. 738, 743 (S.D.N.Y. 1966).
\item \textsuperscript{29} See Benchcraft, Inc. v. Broyhill Furniture Indus., Inc. 681 F.Supp. 1190, 1200 (N.D. Miss. 1988).
\item \textsuperscript{30} A communication is “enabling” if it could serve to teach a person skilled in a particular art “to reduce the disclosed invention to practice.” \textit{In re} Borst, 345 F.2d 851, 855 (C.C.P.A. 1965).
\item \textsuperscript{31} See \textit{Howmedica, Inc.}, 530 F. Supp. at 859.
\item \textsuperscript{32} See \textit{id.} at 859-60.
\item \textsuperscript{33} See Mass. Inst. of Tech. v. AB Fortia, 774 F.2d 1104, 1109 (Fed. Cir. 1985).
\item \textsuperscript{34} See \textit{id.}
\item \textsuperscript{35} See \textit{In re} Bayer, 568 F.2d 1357, 1367 (C.C.P.A. 1978).
\item \textsuperscript{36} See \textit{In re} Cronyn, 890 F.2d 1158, 1161 (Fed. Cir. 1989).
\end{itemize}
indexed in a meaningful way.\(^37\)

Although universities may not be terribly surprised to learn that a thesis may constitute a “printed publication” within section 102(b), university technology transfer officials are often surprised to learn that a grant proposal may constitute a “printed publication” triggering the Patent Act’s statutory bar. For example, in \textit{E.I. DuPont de Nemours & Co. v. Cetus Corp.}, the Northern District of California found that NIH and NSF grant applications constituted “printed publications” because such proposals rendered the applicable invention accessible to the public.\(^38\) In support of its finding, the court emphasized that the grant proposal was indexed by title, author, institution, and grant number, available to the public through the Freedom of Information Act (“FOIA”), and had been specifically referenced in a publication written by the inventor.\(^39\) Importantly, in addition to noting the manner in which the proposal was indexed, the court emphasized that the esteemed professional reputation of the grant applicant increased the grant’s accessibility because it increased the likelihood that the proposal would be reviewed by others in the applicant’s field.\(^40\)

In addition to the “printed publication” statutory bar, a party cannot obtain a United States patent in an invention that was in public use or on sale in the United States more than one year prior to the date of the relevant patent application.\(^41\) Although there is little case law delineating the contours of “public use” and “on sale” in the university context, the common university practice of conducting clinical trials and receiving third party payments in connection with such trials may render an invention in “public use” or “on sale” for purposes of section 102(b) unless a court finds that such trials constitute “experimental” non-commercial use.\(^42\) Additionally, an abandoned

\(^{37}\) See id.


\(^{39}\) See id.

\(^{40}\) See id. This decision may be somewhat limited by the fact that section 552(b)(4) of FOIA does not mandate that the government disclose “trade secrets and other commercial or financial information obtained from a person and privileged or confidential.” It is unclear whether information submitted by a university for a research grant would fall within this definition. However, most granting agencies provide university grant applicants with procedures for identifying and protecting confidential information during the application process. See \textit{generally} Patricia A. Hider, \textit{What Counts: A Publication Guide for the Inventor Seeking a Patent}, \textit{J. ASS’N UNIV. TECH. MANAGERS} 1 (1994).


\(^{42}\) See Paragon Podiatry Lab. v. KLM Labs., 984 F.2d 1182, 1185 (Fed. Cir. 1993). Although the applicability of the experimental use doctrine will depend on the “totality of the circumstances,” courts are likely to review the following factors in determining whether use of an invention was experimental or commercial: 1) the amount of control retained by the inventor over the invention, 2) the extent of public testing required by the invention and
negotiation with a potential licensee may inadvertently trigger the “on sale” bar for an applicable invention.

C. Trade Secrets

1. Creation and Scope of Right

To the extent permitted by its internal policy, a university may protect a broad range of intellectual property as trade secrets. In contrast with patents, a university need not file an application or registration to obtain trade secret protection for a University Technology. Rather, trade secret rights generally arise by operation of law in valuable information that is maintained confidentially. Information such as a method of production, technical data, and general or specific “know-how” can be protected as a trade secret, so long as such information has independent economic value, because it is not generally known and is protected by reasonable secrecy procedures. More specifically, information satisfying the following requirements may be protected as a trade secret:

Information, including a formula, pattern, compilation, program, device, method, technique, or process that: [d]erives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

If information is protected by trade secret laws, it may not be misappropriated without liability. The Uniform Trade Secrets Act, which is adopted in most states, defines misappropriation of a trade secret by improper means as follows:

(i) acquisition of a trade secret by a person who knows or has reason to know that the trade secret was acquired by improper means, or (ii) the disclosure or use of a trade secret of another without express or implied consent by a person who (a) used improper means to acquire knowledge

the necessity of such testing, 3) the length of any test periods, 4) whether payments were made to the inventor, 5) whether the trials were performed under confidentiality obligations, 6) whether records of the experiments were kept and whether feedback regarding the invention was solicited, 7) whether the features being tested were claimed elements in a later patent application, and 8) the amount of commercial exploitation of the invention during the trials in comparison to the amount of experimentation completed. See id.

44 Id.
45 Many states that have not adopted the Uniform Trade Secrets Act protect trade secrets under common law rules that are somewhat similar to the provisions of this Act.
of the trade secret, (b) at the time of disclosure or use, knew or had reason to know that his or her knowledge was derived from a person who had utilized improper means to acquire it, acquired it under circumstances giving rise to a duty to maintain its secrecy or limit its use, or derived through a person who owed a duty of secrecy or limited use to the person seeking relief; or (c) before a material change of his position knew or had reason to know that it was a trade secret and that knowledge of it had been acquired by accident or mistake.\(^{46}\)

Considering the above standards, a university will enhance its ability to protect its trade secrets through misappropriation suits if it maintains secrecy procedures that preserve such rights.

2. Maintenance of Rights

Unlike patents, which expire after a number of years, a trade secret exists as long as it is not generally known and the owner of the trade secret employs reasonable efforts to maintain the secrecy of the trade secret.\(^{47}\) However, because the forfeiture of trade secret rights depends largely on the degree to which the public has access to a trade secret, many of the activities that preclude patentability under the Patent Act’s statutory bars (e.g., printed publications and public use) also may result in the forfeiture of trade secret rights.\(^{48}\) Although there is no developed body of case law delineating the “reasonable efforts” that a university must adopt in order to obtain trade secret rights in a university invention, general precedents suggest that, at a minimum, the following procedures should be employed to maintain the secrecy of a university’s trade secrets:\(^{49}\)

1) the university should identify all information that it desires to protect as trade secrets and should mark all such information, either by way of stamp or some other system, as “confidential”; 2) the university should require all employees upon joining the university to sign a confidentiality agreement that identifies the university’s confidential information, requires them to protect such information and to return all such information and other documents of the university upon leaving the university; 3) the university’s employee handbook should similarly summarize the above employee confidentiality obligations; 4) the university should limit access to trade secrets to employees and third parties on a “need-to-know” basis and should require third parties (including licensees) to sign nondisclosure agreements protecting against unauthorized disclosure and use of such trade secrets; and 5) the university should institute general security procedures to limit unauthorized access to, and misappropriation or use of, the university’s

\(^{46}\) See Upchurch, supra note 43, at § 16.01.

\(^{47}\) See Restatement (First) of Torts § 757 cmt. b (1939).

\(^{48}\) Id.

\(^{49}\) See generally id. § 757.
D. Copyright

1. Creation and Scope of Right

Although a number of technologies are protectable under the copyright laws, university technologies involving computer software are most typically affected by these laws. In contrast to patents and trade secrets, which protect ideas themselves, copyrights protect the “expression of ideas.”  

A copyright generally vests in the author or authors of an “original work of authorship” the moment the work is “fixed in a tangible medium of expression.” Specifically, the Copyright Act grants the author of a copyrighted work the following exclusive rights (among others): (i) the right to reproduce copies of the work, (ii) the right to prepare derivative works based on the work, and (iii) the right to distribute copies of the work. Accordingly, the Copyright Act precludes third parties from exercising any of the foregoing exclusive rights in a copyrighted work without a license from the owner of the applicable copyright.

Although a copyright generally vests initially in the author or authors of a work, a copyright will vest initially in an employer of an author, such as a university, if the work constitutes a “work made for hire” under the Copyright Act.

Section 201 of the Copyright Act defines a “work made for hire” as:

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51 See id. Section 102(a) lists eight categories of “works of authorship” that are contemplated by the Copyright Act. In relevant part, section 102(a) provides that works of authorship include the following categories: (1) literary works; (2) pictorial and graphical works; and (3) audio visual works. Id. The Historical and Statutory Notes to this section clarify that the categories listed in section 102(a) are “illustrative and not limitative,” and, therefore, do not necessarily exhaust the scope of original works of authorship that the Copyright Act is intended to protect. See id. § 102(a). The Copyright Act’s definition of a literary work is rather broad and may include “works . . . expressed in numbers, verbal or other verbal or numerical symbols. . .” Id. § 101. In fact, the Historical and Statutory Notes to section 101 provide that the term ‘literary works’ does not connote any criterion of literary merit or qualitative value; it includes catalogs, directories, and similar factual, reference or instructional works, and compilations of data.” Id. Additionally, registration of a copyright must be secured before a party may bring suit for copyright infringement. Id. § 411(b). Further, affixing a copyright notice to a work is recommended because it bars a defendant from asserting an innocent infringer defense – a claim that the infringer did not realize the work was protected. See id. § 102(a).

52 See id. § 106. A derivative work is a work based on or incorporating a previous work. Id. § 101.
53 See id. § 102.
54 See id. § 201(a)-(b).
(1) a work prepared by an employee within the scope of his or her employment; or

(2) a work specially ordered or commissioned for use as a contribution to a collective work, as part of a motion picture or other audiovisual work, as a translation, as a supplementary work, as a compilation, as an instructional text, as a test, as answer material for a test, or as an atlas, if the parties expressly agree in a written instrument signed by them that the work shall be considered a work for hire. . . .

If a university plans to obtain ownership of a work through a “work made for hire” agreement, it is important to note that, unless the relevant author is an employee of the university, a “work made for hire” clause will likely only vest copyright ownership in the university if the relevant work fits into one of the nine categories listed under section 201(b).

2. Maintenance of Rights

As stated earlier, copyright protection begins the moment a work is fixed in a tangible form of expression. However, registration of a federal copyright with the Copyright Office affords the copyright owner substantial additional rights. For example, registration is a prerequisite to filing a lawsuit for infringement of any copyrighted work whose “country of origin” is the United States, and for certain foreign works. If registration is sought before or within five years of publication, the registration is “prima facie evidence of the validity of the copyright and of the facts stated in the registration certificate” (including authorship and publication date). Additionally, if an application is filed within three months after the first publication of the work, statutory damages and attorneys’ fees are available to the copyright owner in a court action.

E. Joint Ownership of Patents, Copyrights, and Trade Secrets

Patents, copyrights, and trade secrets may be owned by multiple parties at
the same time (i.e., jointly owned). In fact, it is common practice in sponsored research agreements and is somewhat common in technology transfer agreements to provide that technologies developed jointly by a university and a third party will be jointly owned by such parties. It is less common, however, that universities and licensees fully understand the legal impact and resulting problems associated with joint ownership of technology.

Joint ownership of technology typically arises because parties agree to such a provision in an agreement or because an agreement does not address the issue and, as a matter of law, two parties obtain ownership rights in the technology. In the absence of an agreement assigning sole ownership of a patent to one party, if a patentable invention is made by two or more co-inventors, each co-inventor owns an undivided interest in the patent. It is worth emphasizing that, under this rule, a co-inventor owns an interest in the entire patent even if it was responsible for only some of the claims in the patent. Consequently, in a University Deal involving joint development between the university and its licensee, joint ownership of a patent may arise by default if employees of each party contributed to some degree to the “conception” of an invention.

In contrast to the patent laws, under the Copyright Act, two parties will jointly own a copyright in a work only if they intend to create a “joint work.” A “joint work” is a “work prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole.” Each co-author of a joint work owns an undivided interest in the whole work as long as such author contributes a copyrightable portion of the joint work.

Under the Copyright Act, each co-owner of a copyright has a right to exercise the exclusive rights afforded under the Copyright Act (e.g., reproduction, distribution, preparation of derivative works. . . .) without

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64 Conception is generally held to occur when there is a definite and permanent idea sufficient to enable a person with ordinary skill in the art to reduce the invention to practice without extensive research or experimentation. See 1 DONALD S. CHISUM, CHISUM ON PATENTS § 2.02 (2004).

65 The test for evaluating the “intent” of parties to be co-authors varies from Circuit-to-Circuit, however, a written agreement is typically the most persuasive evidence of such intent. See 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 6.01 (2005).


67 Id. § 101.

68 See Erickson v. Trinity Theatre, Inc., 13 F.3d 1061, 1068 (7th Cir. 1994); Ashton-Tate Corp. v. Ross, 916 F.2d 516, 520 (9th Cir. 1990).
obtaining the other co-owners’ consent. However, a co-owner of a copyright must account to the other co-owners for profits earned using or licensing such copyright unless there is an agreement to the contrary. In contrast, each joint owner of a patent can make, use, sell, offer to sell, and import a patented invention without the consent of other joint owners and without any obligation to account to other joint owners for a share of the profits. While the accounting rule is typically the most common “trap for the unwary” for jointly owned copyrights, the enforcement of infringement suits against third parties typically creates the most difficulties for joint owners of a patent.

A joint-owner of a patent cannot bring an infringement suit against a third party unless all joint-owners join in the suit. In the absence of an agreement requiring all joint owners of a patent to join in infringement suits filed by other joint-owners, it is often difficult to convince all such owners to participate in a suit because alleged infringers will often attempt to mitigate their liability by providing other joint owners with lucrative licensing offers.

In contrast with the authority regarding joint ownership of copyrights and patents, there is little authority governing the joint ownership of trade secrets. However, based on the discussion set forth in Section II(C), it seems unlikely that two parties could jointly own a trade secret unless both parties either had a contractual obligation or an obligation under applicable state law to maintain the secrecy of the trade secret.

F. Federal Regulation

In addition to developing an understanding of the intellectual property rights that are typically transferred or licensed in connection with a University Deal, it is also important to identify the rights that the federal government retains in University Technology that has been developed, at least to some degree, with federal funding.

Under the Bayh-Dole Act, non-profit organizations, small business firms, and large businesses that receive federal funding in connection with developing an invention may elect to retain rights in the invention.

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69 Cf. Weissmann v. Freeman, 868 F.2d 1313, 1318 (2d Cir. 1989).
70 See Nimmer, supra note 65, at § 6.12.
74 See, e.g., Schering Corp. v. Roussel-UCLAF SA, 104 F.3d 341, 343 (Fed. Cir. 1997).
75 See Exec. Order No. 12,591, 52 Fed. Reg. 13,414 (Apr. 22, 1987). In order to promote the commercialization of federally funded research, the Order requires that all contractors, “regardless of size,” be granted the titles to patents made in whole or part with federal funds, subject to a federal license. Id.
Specifically, the Act applies to “subject inventions,” which are inventions “conceived or reduced to practice in the performance of work under a funding agreement.” However, the Act does not apply to activities outside the scope of a government-funded project as long as such activities do not detract from the funded project.

Under the Bayh-Dole Act, the federal government requires universities with subject inventions (each such university, a “Funded University”; each such invention, a “Subject Invention”) to comply with numerous reporting requirements that assist the Government in monitoring the status of such inventions. Specifically, a federal agency that funds a university project (the “Federal Agency”) is required to bind the Funded University to the provisions set forth in 37 C.F.R. § 401.14, the Standard Patent Rights Clause. Under section 401.14(f), Funded Universities must establish written agreements with all employees requiring such employees to disclose promptly each Subject Invention made under a federally-funded program and to execute all papers necessary to file patent applications. Also, section 401.14(c)(1) requires Funded Universities to disclose a Subject Invention to the Federal Agency within two months after the inventor discloses the Subject Invention to the Funded University and to report to the Federal Agency any conduct which would trigger the statutory bars of section 102(b) of the Patent Act (e.g., publication, public use, or sale).

As a condition of receiving federal funding, the Bayh-Dole Act further requires a Funded University to: 1) complete a final invention statement describing the status of a Subject Invention at the closeout of the applicable funding agreement; 2) elect whether to retain title to a Subject Invention within two years of the Funded University’s disclosure to the Federal Agency and, at least sixty days prior to any section 102(b) statutory bar dates; 3) file a patent application for the Subject Invention within one year of electing title in such invention and before any applicable statutory bar dates; 4) acknowledge the Government’s support in the Funded University’s patent application; 5) if the Funded University has elected title in the invention,
grant the Government a “non-exclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States, the Subject Invention throughout the world;” require exclusive licensees to manufacture the Subject Invention substantially in the United States; and provide an annual report on utilization for any patented or licensed Subject Invention that includes an identification of the date of first commercial sale or use of the Subject Invention, the status of development of such invention, and the gross royalties received by the Funded University.

Although the Government rarely exercises its right to obtain title of Subject Inventions or to require a Funded University to license a Subject Invention to a third party, the Bayh-Dole Act and its implementing regulations grant the Government significant rights in such inventions if a Funded University fails to comply with the above reporting requirements and the other obligations of Bayh-Dole. For example, under section 401.14(d)(1), if a Funded University neglects to disclose or elect title in a Subject Invention within the specified deadlines, the Federal Agency may, by written request, obtain title in the invention within sixty days after learning of the Funded University’s failure to disclose or elect title in the Subject Invention. The Federal Agency may also specify in a contract that the disclosure take a particular form, and that a failure to meet this requirement will allow the government to take title to the Subject Invention. Consistently, under section 401.14(d)(2)-(3), the Federal Agency may obtain title to a Subject Invention by written request in any country where a Funded University fails to file a patent application within the specified deadlines or otherwise fails to prosecute the patent or to pay applicable maintenance fees.

In addition to the fact-specific Government rights set forth above, the Bayh-Dole Act vests the Government with more general purpose rights to “march-in.” The invention was made with Government support under (identify program) awarded by (identify agency). The Government has certain rights in the invention.” Id. § 401.14(f)(4).

85 Id. § 401.14(b).

86 The applicable federal agency may waive this requirement upon showing that reasonable but unsuccessful efforts have been made to grant licenses on similar terms or that, under the circumstances, domestic manufacture is not commercially feasible. See id. § 401.14(i).

87 See id. § 401.14(h). A federal agency must treat this information as exempt from FOIA disclosure under the commercial and financial information exception. See 35 U.S.C. § 202(c)(5) (2000).


89 See Campbell Plastics Engineering & Mfg., Inc. v. Brownlee, 389 F.3d 1243, 1249 (Fed. Cir. 2004) (holding that “piecemeal submissions” of “various progress reports and drawings” did not meet the contractual requirement that the invention be disclosed in a “single, written report,” thus allowing the government to take title to the invention).

90 See id. § 401.14(d)(2)-(3).
in” and require a Funded University, its licensees, and/or assignees, under a limited set of circumstances, to grant a license to a Subject Invention to a third party.\textsuperscript{91} For example, the Government may exercise its “march-in” rights if a Funded University, licensee, or assignee fails to take effective steps to achieve practical application of the invention in a reasonable amount of time, if a Government “march-in” is necessary for public health and safety reasons or is required by public use regulations, or if an exclusive licensee has failed to comply with Bayh-Dole’s U.S. manufacture requirements.\textsuperscript{92}

Finally, because most universities are non-profit organizations, Funded Universities are generally subject to three regulations that do not apply to for-profit Bayh-Dole contractors. First, a Funded University may not assign title (as opposed to license rights) in a Subject Invention without the consent of the Federal Agency unless the assignment is to an asset management organization.\textsuperscript{93} Second, a Funded University must share royalties received from a Subject Invention with its inventors and, after payment of the Funded University’s expenses, must use the remainder of royalties received for scientific research and education.\textsuperscript{94} Third, Funded Universities are required to give preferences to small businesses when licensing Subject Inventions.\textsuperscript{95} Notwithstanding this general rule, the Bayh-Dole Act regulations further clarify that a small business shall not receive preference if it lacks the ability to commercialize a Subject Invention in an efficient manner:

\begin{quote}
[If the Contractor is a non-profit organization it agrees to] . . . make efforts that are reasonable under the circumstances to attract licensees of a subject invention that are small business firms and that it will give a preference to a small business firm when licensing a subject invention if the contractor determines that the small business firm has a plan or proposal for marketing the invention, which if executed, is equally likely to bring the invention to practical application as any plans or proposals from applicants that are not small business firms; provided, that the contractor is also satisfied that the small business firm has the capability and resources to carry out its plan or proposal.\textsuperscript{96}
\end{quote}

Section 401.7 of the Bayh-Dole regulations further emphasizes that the standard for measuring “reasonable efforts” will vary with the “circumstances and the nature, duration, and expense of efforts needed to bring the invention to the market.”\textsuperscript{97} Additionally, section 401.7 specifically clarifies that the

\begin{itemize}
\item \textsuperscript{91} See id. § 401.14(j).
\item \textsuperscript{92} See id.
\item \textsuperscript{93} See id. § 401.14(k)(1).
\item \textsuperscript{94} See 35 U.S.C. § 202(c)(7) (2000).
\item \textsuperscript{95} See 37 C.F.R. § 401.14(k)(4).
\item \textsuperscript{96} Id. § 401.14(k)(4) (emphasis added).
\item \textsuperscript{97} Id. § 401.7(a).
\end{itemize}
Bayh-Dole Act should not be construed to prevent non-profit organizations from providing a large company with a right of first refusal or option to commercialize an invention that relates to research supported under long-term agreements or other arrangements with such a company.98

G. Intellectual Property and Regulatory Due Diligence Considerations

As is discussed in greater detail below, universities rarely provide a licensee in a University Deal with a representation and warranty that the University owns all right, title, and interest in the University Technology free and clear of any third party claims. Accordingly, in order to assess the risks associated with licensing a particular University Technology, the licensee’s due diligence review of a particular deal should include fact-based inquiries targeted at identifying the type of university conduct that could weaken the University’s intellectual property rights in a University Technology or that increases the government’s rights in such technology. Based on the responses received by the licensee in connection with such due diligence, a prospective licensee can evaluate the desirability of the deal in a more educated manner and can typically convince the University to agree to fact-specific representations that memorialize the University’s due diligence responses. Although the due diligence checklist set forth below is not exhaustive and should be used in conjunction with a practitioner’s general due diligence materials, the following requests represent a good starting point for any due diligence of a possible University Deal.

1. Patent Due Diligence

- Identify all professors and other inventors that have, to some degree, contributed to the University Technology (each an “Inventor”).
- Indicate whether each Inventor has assigned its patent rights in the University Technology to the University.
- Indicate whether each such assignment occurred prior to the commencement of such Inventor’s period of employment with the University.
- Describe where each Inventor is currently employed and was employed for the five year period before working for the University.
- Provide copies of the University’s intellectual property policy, and the employment agreements, independent contractor contracts and all other agreements defining the employment and/or consulting arrangement.

98 See id.

99 University Technology refers to technology conceived, reduced to practice, or otherwise created at the applicable university.
between the University and each Inventor.

- Identify all “printed publications” published by any Inventor or the University, or otherwise known to the University, that relate to the University Technology. For purposes of this request, “printed publication” includes slides, drawings, photographs, information available on the Internet or Intranet, computer programs, posters, handouts or other information that has been disseminated to the public or is otherwise accessible to the public, through whatever means.

- Identify all conferences attended by an Inventor since the conception of the University Invention in which a subject area related to the University Technology was discussed (each such event a “Conference”).

- Identify and describe any presentations made and materials distributed at any such Conferences.

- Identify all theses and academic articles authored or co-authored by any Inventor, or otherwise known to the University, relating to the University Technology (each a “Thesis”).

- Describe how each such Thesis is indexed and identify each such Thesis that has been disseminated to the public.

- Provide copies of all grant applications submitted to any federal agency by or on behalf of any Inventor and all other grant applications otherwise known to the University relating to the University Technology and all other written correspondence with such agencies relating to the University Technology.

- Describe how the University Technology has been used by or on behalf of the University since the conception of the University Technology.

- Describe all experimental use of the University Technology that has taken place since its conception including any beta tests and/or clinical trials.

- List all United States and foreign patent applications for the University Technology that have been applied for or issued (each such issued patent a “Patent”) and for each such application and Patent identify the relevant patent numbers, all inventors, and the date of each such application or issuance of the patent.

- Identify any prior owners of each Patent and provide copies of any Patent assignments or licenses.

- Indicate whether maintenance fees have been paid for each such Patent.

- Identify and describe all security interests filed against any Patent.
- Indicate whether the University has conducted any patent searches relating to the University Technology, whether it is aware of any blocking patents or claims that the University Technology infringes third party rights.

- Identify and describe all offers received by the University or prior discussions conducted by the University relating to the licensing, sale, use of, or access to, the University Technology in which compensation was offered to or requested by the University.

2. Trade Secret Due Diligence

- Identify and describe all information relating to the University Technology that is not generally available to the public (“Confidential Information”).

- Indicate whether Confidential Information is marked as “confidential” or otherwise marked to reflect the fact that such material is considered private.

- Identify the procedures employed by the University to limit unauthorized access to the Confidential Information.

- Identify all employees and other parties with access to the Confidential Information (“Authorized Personnel”).

- Identify all Authorized Personnel that have not signed an agreement protecting the confidential nature of the Confidential Information (“Confidentiality Agreement”).

- Provide copies of all Confidentiality Agreements signed by Authorized Personnel or by other parties that have had access to the Confidential Information.

- Describe any unauthorized access to, or public disclosure of, Confidential Information and/or University Technology that is known to the University.

- Indicate whether the University is aware of any claims that the Confidential Information and/or University Technology was developed or obtained through improper means.

3. Copyright Due Diligence

- Identify all copyrights in the University Technology registered in the United States or abroad and provide a list of all relevant registration numbers and the date each such registration was issued.

- Identify the date the University Technology was first created and first
- Identify each author/developer of the University Technology (each a “Developer”).

- Identify each Developer that was employed by the University at the time the University Technology was created (each an “Employee Developer”).

- Provide a general overview of each Employee Developer’s job description at the time the University Technology was created.

- Identify each Developer that was not employed by the University at the time the University Technology was created (each a “Contractor Developer”).

- Identify each Developer that has agreed to a “work made for hire” provision or assigned its copyright in the University Technology to the University and provide copies of all such agreements.

- Identify whether each such assignment or agreement occurred prior to the commencement of such Developer’s period of employment with the University.

- Provide copies of the University’s intellectual property policy and any other policy relating to literary or artistic works.

- Identify any prior owner of a copyright in the University Technology and describe the means by which the University acquired such copyright.

- Identify whether any such transfers of ownership were recorded and describe the means by which any such transfer was recorded.

- Identify and describe all security interests filed against a copyright in the University Technology.

- Indicate whether the University is aware of any claims that the University Technology infringes third party rights.

- Indicate whether the University Technology and each reproduction thereof contains a copyright notice.

- Indicate whether the University has granted any licenses to copyrights in the University Technology.

4. Joint Ownership Due Diligence

- Identify each Inventor, Developer, party compensated by the University or other person that assisted in making or otherwise contributed to the development of the University Technology (each such person a “Creator”).
- Generally describe each Creator’s contribution to the development of the University Technology.

- Identify and provide copies of all written agreements and describe any other known agreements among any of the Creators relating to the development of the University Technology.

- Identify and provide copies of all known agreements, including, without limitation, all sponsored research agreements, between the University and any third party relating to the development of the University Technology.

- Identify and provide copies of all written agreements and describe any other known agreements for the joint ownership of the University Technology or any portion thereof.

5. Federal Regulation Due Diligence

- Indicate whether the University Technology (or a portion thereof) was either conceived or reduced to practice under a funding agreement with the federal government.

- Identify each federal agency (or subdivision thereof) that has provided funding related to the University Technology (each a “Funding Agency”) and provide a general description of the program pursuant to which funding was received and a copy of the University’s funding agreement with the Funding Agency.

- Provide copies of all University agreements with all employee Creators requiring such employees to promptly disclose federally funded inventions and sign papers necessary for the University to file patents in such inventions.

- Identify the date when the University Technology was first disclosed to the University and provide a copy of this disclosure.

- Identify the date when the University disclosed the University Technology to the Funding Agency and provide a copy of this disclosure.

- Indicate whether the University’s Funding agreement with the Funding Agency is complete and, if it is, whether the University has provided the Funding Agency with a final invention statement.

- Indicate whether the University has elected title to the University Technology and, if the University has made such an election, identify the date this election was made.

- Indicate whether the University has filed any patent applications for the University Technology and, if such applications have been filed, identify the date each such application was filed and whether each such
application acknowledges the Government’s support of the University Technology.

- Provide copies of all annual reports on the status of the University Technology that the University has provided to the Funding Agency.

- Provide a description of any notice the University has received from the Government or a third party which suggests either that the Government is considering exercising its “march-in” rights or that a third party has requested the Government to exercise such rights.

- Provide a general description of the University’s plan to distribute its royalties from the University Technology.

- Provide a brief description of the University’s decision-making process relating to the use of small businesses to commercialize the University Technology.

III. EVALUATING THE EXECUTION RISK OF A UNIVERSITY DEAL INVOLVING A START-UP

Although universities often license University Technology directly to an established company with a presence in the relevant market (each such company a “Strategic Partner”), they are increasingly using start-up companies (each such company a “Start-Up”), which are often partially or wholly owned or controlled by the applicable university (the “University”), as vehicles for commercializing University Technology. Accordingly, an evaluation of a University Deal will increasingly involve not only technical and legal due diligence relating to the University Technology, but also an assessment of whether the corporate structure and financing arrangements entered into by the Start-Up create an “execution risk” relating to the Start-Up’s capacity to perform its obligations under a licensing deal. Section III provides a general overview of these two issues and outlines some of the risk factors that can arise from the way a Start-Up is formed or financed.¹⁰⁰

A. Choosing the Appropriate Corporate Structure

The first step in evaluating the risk in deals with a Start-Up is to evaluate why the Start-Up was formed. Regardless of the various motivations driving the formation of a Start-Up, most Start-Ups will have three fundamental goals in common: (i) assembling a qualified management team, (ii) raising capital, and (iii) successfully commercializing its University Technology. Although

¹⁰⁰ This section does not attempt to provide an exhaustive checklist of issues for consideration when forming a Start-Up entity. Rather, this section provides a handful of benchmarks for evaluating, from a corporate structure viewpoint, the contractual restrictions that can limit a Start-Up’s ability to freely enter into licensing deals.
there are numerous corporate entities to choose from when establishing a Start-Up entity, the discussion below will focus on the general implications and advantages of using a corporation rather than a limited liability company (an “LLC”) as the corporate vehicle that best addresses the preceding goals.

For many Start-Ups, the ability to raise venture capital can often be the determining factor in its success or failure. The reason for this lies in the sophistication that experienced venture capitalists can bring to the management team through their investment in a Start-Up. Typically venture capitalists will join the management team at the board of directors level. Because venture capitalists tend to focus their investments on specific industries, they are often able to provide important access to the marketplace through their connections to various industry contacts. As a result, experienced venture capitalists can often facilitate a Start-Up’s ability to commercialize its University Technologies by providing it with meaningful access to potential acquirors or licensees.

Few Start-Up decisions have as direct an impact on a Start-Up’s ability to raise funds as the choice of corporate structure. The link between raising capital and choosing a corporate structure arises from the adverse tax implications that occur when a nonprofit organization invests in flow-through entities such as partnerships and LLCs. Nonprofit organizations typically cannot invest in flow-through entities or they will be deemed to have incurred unrelated business taxable income.\textsuperscript{101} If a nonprofit entity strays far enough away from its founding objectives it can also risk losing its nonprofit status.\textsuperscript{102} Because most venture capital funds have investors who fall within the category of a nonprofit organization (i.e., universities, pension funds, certain charitable organizations and profit sharing trusts), they are typically restricted from investing in flow-through entities such as an LLC.\textsuperscript{103} Consequently, before entering into a University Deal involving a Start-Up, a Strategic Partner should evaluate whether the Start-Up’s structure allows it to raise capital from the traditional venture funding sources that are often needed to finance the Start-Up’s operations. Without proper financing, a Start-Up may not be in the financial position to provide support services necessary to meet its obligations under a strategic licensing deal.\textsuperscript{104}

\textsuperscript{101} HOWARD L. OLECK \& MARTHA E. STEWART, NONPROFIT CORPORATIONS, ORGANIZATIONS \& ASSOCIATIONS 298 (6th ed. 1994).
\textsuperscript{102} \textit{Id}.
\textsuperscript{103} CONSTANCE E. BAGLEY \& CRAIG E. DAUCHY, THE ENTREPRENEUR’S GUIDE TO BUSINESS LAW 63 (1998).
\textsuperscript{104} Notwithstanding the above discussion, if a potential licensee determines that a Start-Up will not need venture capital funding, an LLC could be a viable option because it allows investors to deduct losses from their taxable income. Many investors view this as a way to hedge against their potential losses since they expect a Start-Up to generate losses for its first few years of existence. Additionally, since the Start-Up can be converted into a
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B. Institutional Financing

In addition to evaluating whether the Start-Up is structured in the most advantageous way to raise venture capital, a licensee in a University Deal involving the Start-Up should additionally review and analyze the financing arrangements a Start-Up has already obtained to determine if any restrictive covenants or voting thresholds must be addressed prior to consummating a deal. Often Start-Ups will be forced to raise significant rounds of financing to achieve the type of growth needed to effect their commercialization strategy. Consequently, Strategic Partners should be cognizant of the onerous terms within the financing documents that are often imposed on Start-Ups. The discussion below is intended to increase awareness of the typical stockholder rights afforded to late stage investors so that prospective Start-Up licensees may better understand the implications of such rights and how they can end up detracting from a Start-Up’s ability to act as an effective commercialization partner.

Investors offering to finance a Start-Up with significant amounts of capital after the formation stage will typically purchase preferred stock of the Start-Up with numerous rights and preferences built into the stock to help protect their investment. Specifically, the preferred stock will generally entitle the investors to receive liquidation preferences, special voting rights, anti-dilution protections, dividend rights, and numerous other special privileges that are not afforded to common stockholders. Many of the preceding rights and preferences can have adverse effects on the existing equity holders, such as the founders, if such rights are exercised by the preferred investors. Additionally, the restrictive covenants and voting rights provided via preferred stock ownership can often lead to diminished control of the Start-Up for the existing management. When significant amounts of capital are raised, an outside investor will typically lead the negotiations with the Start-Up on behalf of the other investors (often deemed the “Lead Investor”). The Lead Investor may be granted one or more seats on the board of directors along with various veto rights over company actions as part of the rights associated with the preferred stock. As discussed above, if the Lead Investor is experienced and well connected, the effects can be positive for the Start-Up. However, if the Lead Investor does not offer a skill set that compliments the Start-Up’s commercialization goals, the results could be detrimental to the Start-Up’s commercialization efforts. For example, if the Lead Investor gains a controlling interest on the Start-Up’s board of directors or certain veto rights, corporation in a tax free transaction (typically through a merger), many investors prefer to obtain the tax benefits of an LLC until raising additional capital from a traditional venture fund becomes an absolute necessity. It is important to note, however, that the conversion of an LLC into a corporation can be costly given the often complex accounting and tax issues that can arise when effecting such conversion.
the Start-Up may be forced to pass on a licensing deal or strategic transaction against the University’s and its own wishes. The following is an excerpt taken from an actual Start-Up’s Certificate of Incorporation as negotiated during its Series A Preferred Stock round of financing. The excerpt serves as an example of the type of restrictive terms which investors often impose on Start-Ups in connection with financing rounds:

The Corporation shall not, without first obtaining the written consent or affirmative vote of the holders of sixty six and two-thirds percent (66 and 2/3%) of the then outstanding shares of Series A Preferred Stock: (i) license any technology or intellectual property which is material to the business of the Corporation under terms that have the effect of a permanent transfer of that technology or those intellectual property rights other than in the ordinary course of business or unless approved by the Company’s Board of Directors including each of the representatives of the Series A Preferred Stock.

Because Lead Investors typically own a large block of the Series A stock, they are often able to dictate the outcome of Series A stockholder votes such as the one referenced above. Consequently, before entering into a University Deal involving a Start-Up, a Strategic Partner should carefully evaluate the mechanisms for control that the Start-Up’s key investors maintain over the company and the track records of such investors within the industry relevant to the deal.

Similarly, Start-Ups that have obtained financing from alternative lending sources, such as a bank or other lending institution, may be subject to restrictive covenants or security agreements which impede their ability to enter into a strategic licensing deal. For example, many lending institutions will attempt to minimize the risks of lending capital to a Start-Up with few, if any, tangible assets by either imposing a series of restrictive covenants, which often include obtaining the lender’s prior written consent before the Start-Up can license its intellectual property to a third party. If the Start-Up does not obtain this written consent, the Start-Up could find itself in default of its loan agreement and face potential foreclosure on the loan. Additionally, lenders may also impose a security interest on the Start-Ups tangible and intangible assets. If so, the Start-Up may also be required to obtain the lender’s written consent before entering into a licensing deal with a Strategic Partner. Consequently, if a Start-Up has obtained capital from institutional lenders, the Strategic Partner should carefully review the potential restrictive covenants and impositions on a Start-Up’s intellectual property that could exist within a loan or security agreement in connection with such lending.

IV. NEGOTIATING A LICENSE TO TRANSFER UNIVERSITY TECHNOLOGY INTO THE COMMERCIAL SECTOR

University inventions are typically licensed pursuant to rather sophisticated
licensing arrangements, in part because University Technology is often licensed in early stages of its development. Consequently, early stage University Technology often cannot be transferred as a commercial product to the mass-market unless the University grants its licensees relatively broad development and distribution rights. These broad development and distribution rights distinguish University Deals from traditional, commercial licensing transactions.\textsuperscript{105} As is discussed in greater detail below, broad development and distribution rights often complicate the processes of 1) allocating intellectual property ownership, 2) providing each party with proper incentives to perform its obligations under a deal, 3) establishing fair pricing terms, and 4) apportioning liabilities among the parties to a University Deal.\textsuperscript{106}

Although many universities license technology directly to Strategic Partners,\textsuperscript{107} universities are increasingly forming Start-Ups to commercialize University Technology. Typically, negotiations surrounding a license in University Technology between the University and its Start-Up are not controversial because the University often exerts significant control over the Start-Up. However, because such Start-Ups often lack the development and marketing resources to bring a University Technology to the mass market, such Start-Ups will often enter into development and channel distribution agreements with Strategic Partners.

When a University Technology is licensed either directly through a Strategic Partner or indirectly through a Start-Up/Strategic Partner structure, lengthy negotiations often follow regarding the rights and obligations under the applicable license agreements. In deals involving a Start-Up/Strategic Partner structure, the Strategic Partner will often want the University to be involved in the negotiations so that the University/Start-Up license may be revised to incorporate any business terms required by the Strategic Partner and agreed to by the University and its Start-Up. Accordingly, references throughout Section IV to negotiations between the University and its Strategic Partner shall refer to both direct licensing negotiations between the University and its Strategic Partner and indirect negotiations where the Strategic Partner’s requests, and the

\textsuperscript{105} The authors recognize that not every University Deal will involve the licensing of early stage technology and that some University Deals will be similar to traditional, commercial transactions. However, the discussion set forth in Section IV assumes the relevant University Deal involves early stage technology and provides an overview of the types of issues that are likely to arise in negotiating such a transaction.

\textsuperscript{106} In addition, apportioning liabilities in a University Deal involving a state university is further complicated by the fact that state universities are often restricted by statute from assuming certain liabilities such as agreeing to indemnify a party to a University Deal. Accordingly, in addition to considering the discussion set forth below, a potential licensee should review all applicable state law restrictions on the terms of a particular University Deal before entering into the deal.

\textsuperscript{107} See supra Part III.
University’s responses to such requests, are passed through the Start-Up.
This section will provide an overview of the unique issues and debates that routinely arise when a University Technology is licensed to a Strategic Partner. Although this paper does not attempt to provide an exhaustive list of issues to consider in connection with a licensing transaction, the authors hope to facilitate the efficiency of closing University Deals by highlighting issues that are heavily negotiated in such deals and summarizing the typical scope of such negotiations. If the issues in this section are discussed prior to the term sheet stage of a University Deal, the University and its Strategic Partner will likely find the process of forming a University Deal less exacting.

A. Defining “University Technology” and the Strategic Partner’s Obligation to Pay for “University Technology”

In University Deals, the University and its Strategic Partner often negotiate heavily over the scope of what is actually licensed under a particular transaction. The Strategic Partner typically requests a broad definition of “University Technology” and argues that, in order to modify and develop the University Technology, it will need a license under all of the University’s intellectual property rights. In contrast, the University generally advocates a more narrow definition of “University Technology” to safeguard against inadvertently licensing related University research.

Although these competing interests will have some impact on the manner in which the physical material constituting the University Technology is defined, the University’s and Strategic Partner’s respective technical teams can usually reach a mutually agreeable definition of this aspect of University Technology. A debate, however, is more likely to ensue when the parties attempt to define the intellectual property rights transferred to the Strategic Partner and the manner in which the Strategic Partner will compensate the University for such rights.

Typically, a Strategic Partner will solicit a license for both the University Technology and all of the University’s patent rights, copyrights, trade secrets, know-how, and other intellectual property rights in such technology within a defined field of use.108 Although the rights afforded to a Strategic Partner under a patent or copyright license are defined by statute and are relatively clear (e.g., the rights to reproduce, distribute, exclude others from making, selling, etc.), the licensing of a University’s trade secrets or, more

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108 “Know-how” typically refers to the specific knowledge that is necessary to practice under a patent or to make use of a technology, but which may not itself be patentable. “Know-how” often exists in the form of technical information, data, processes, or discoveries and is generally protected by trade secret laws. For example, in the context of software, “know-how” may refer to the logic and algorithms underlying a specific application.
appropriately, “know-how,” to a Strategic Partner implicates less clearly defined rights. In short, such licenses effectively give the Strategic Partner a right to study, develop an understanding of, and use the University’s institutional intelligence and logic. Although this seems outwardly simplistic, it is often difficult to identify when a Strategic Partner has made use of general “know-how” and should therefore be obligated to pay the University a license fee. For example, if a Strategic Partner has a license to use the University’s “know-how” related to a software application and is obligated to pay royalties only for distributions and modifications of the software, the Strategic Partner may distribute software applications that are not considered modifications of the licensed software application without paying any corresponding license fees. At the same time, it is difficult to distinguish clearly between applications that could not have been developed by the Strategic Partner in the absence of access to the University’s know-how from applications that could have been developed.

In summary, it is difficult to define the types of Strategic Partner product distributions that should trigger a royalty payment in a manner that is sufficiently broad to cover products resulting from University know-how but not so broad that it covers products developed independently by the Strategic Partner. One way this conflict can be resolved is by drafting a provision which generally requires the Strategic Partner to make royalty payments to the University for products with features and functions substantially similar to the University Technology within the licensed field of use. However, such a provision may lead to further negotiations because, if the provision is accepted, the Strategic Partner will also likely request the University to acknowledge that the Strategic Partner retains the right to develop similar products to the University Technology in a “clean room” environment.

B. Exclusivity and Performance Benchmarks

In order to induce a Strategic Partner to invest the capital that is often required to develop and commercialize a University Technology (especially in University Deals involving early stage technology), the University will typically grant the Strategic Partner an exclusive license to develop and distribute the University Technology within a defined field of use, and often within a defined geographic territory. In University Deals involving such a license grant, the University will attempt to tie the Strategic Partner’s exclusive rights to the performance of minimum benchmarks. In defining performance benchmark measures, the University will routinely request that such measures should be based upon verifiable indicators such as quarterly revenues received by the University from the University Deal. If a technology will be developed for an extended period prior to distribution, the University may also condition the Strategic Partner’s distribution license, or at least its exclusivity, on the satisfaction of certain development milestones (e.g., beta tests and clinical
trials) by specified dates. In contrast, Strategic Partners are understandably resistant to guarantee future revenues and usually prefer to guarantee that a certain amount of money or resources will be dedicated to the commercialization of the University Technology. However, the resolution of this issue will depend largely on the nature of the opportunity perceived by the Strategic Partner.

C. Ownership of Improvements to University Technology and the Enforcement of Rights

The process of developing University Technology for distribution as a commercial product will often involve months or years of development work that may include joint development between the University and its Strategic Partner. Additionally, in many University Deals, the University will typically retain a license to continue its own research and development of the University Technology for educational and sometimes commercial purposes. Strategic Partners will often agree to such provisions when they believe that such provisions will lead to improvements and enhancements to the University Technology.

Although there is no easy recipe for determining which party should own such improvements, an agreement should be reached in painstaking detail upfront in order to avoid substantial delay in the transaction. Accordingly, prior to negotiating a University Deal, the parties will typically specify clear rules for establishing the following: (1) ownership of improvements developed (a) solely by the University/Start-Up, (b) solely by the Strategic Partner, and (c) jointly by the parties; (2) whether any improvements will be jointly owned and whether such improvements may be exploited by the parties without accounting obligations; (3) whether jointly owned improvements must be maintained as trade secrets by the parties; (4) the nature of the license that either party will have in improvements not owned by such party; (5) the party or parties that are entitled to prosecute foreign and domestic patent applications and to pursue similar intellectual property registrations for any improvements; (6) the party or parties that will be required to finance such prosecution; (7) the party or parties that will be entitled to bring suit against third party infringers of intellectual property rights in any improvements; (8) the party or parties that will be responsible for financing such suits; and (9) the degree of cooperation that will be required by non-parties to such suits, which is particularly important in cases of jointly owned improvements.

In deciding which parties will own improvements to University Technology, both parties should be cognizant that improvements to the University Technology will often result from the University’s “know-how” and may often be similar to and competitive with the University Technology. Consequently, allocating ownership rights in improvements to University Technology often significantly impacts the economic incentives of the underlying business deal.
If the Strategic Partner obtains ownership rights in improvements to University Technology made during a University Deal, it may likely have an incentive to distribute such improvements in lieu of the University Technology unless the Strategic Partner is required to pay the University royalties for distributions of such improvements. Conversely, if the University obtains ownership rights in improvements made to University Technology during a University Deal, it may likely have leverage in negotiating the terms of distributing such improvements with the Strategic Partner because, if agreement is not reached, the University may have the ability to distribute such improvements through a competitor of the Strategic Partner. Accordingly, before agreeing to provisions governing the ownership of improvements to University Technology, both parties should consider the impact that such an agreement will have on the distribution arrangements contemplated by the applicable University Deal.

D. Royalties and Price Gaming

University Technology is typically licensed under an arrangement where the University’s Strategic Partner pays the University a percentage of revenue received (a royalty) based upon distributions of such technology. Determining the pricing of a University Deal typically will involve two steps. First, the parties will determine an appropriate royalty percentage. Second, the parties will establish rules to ensure that the Strategic Partner will not manipulate its prices to minimize its royalty obligations.

Determining the appropriate royalty percentages in a University Deal is often a difficult task because royalty percentages can significantly vary depending on the type of technology involved, its stage of development, the Strategic Partner’s need for the technology, the terms of the license agreement, and a host of other factors. For example, one study found that the normal royalty for a diagnostic product that has been only proven to work in vitro was between 2% and 6% of net sales. In contrast, the normal royalty for completed software that connects personal computers to mainframes was 25%. Additionally, a University may often agree to a royalty percentage that is below market value in exchange for guaranteed research grants or stock.

Universities often identify acceptable royalty rates by researching similar agreements in the Strategic Partner’s industry and, in particular, among the Strategic Partner’s competitors. If a Strategic Partner is a public company, this research often includes an investigation of whether the Strategic Partner has filed any similar license agreements with the Securities and Exchange Commission in its annual filings.

110 See id.
Some commentators have suggested that 25-33% of expected profits from a venture should be paid to the grantor of an exclusive license in University Deals and that half of this amount should be paid to the grantor of a non-exclusive license. Under this theory, the remaining profits from a venture typically go to whomever develops, manufactures, markets, and distributes the licensor’s technology. However, it is worth emphasizing that this rule only provides the parties to a University Deal with a general starting point. Actual royalties paid under a deal will vary substantially depending on the business terms of the deal and the general market demands and conditions.

In addition to developing appropriate royalty percentages, the University and the Strategic Partner often spend significant amounts of time defining the parameters of the Strategic Partner’s royalty obligations. The parties often negotiate heavily over whether royalties will be based on 1) net or gross revenues received by the Strategic Partner, 2) sales of not only the University Technology, but also of derivatives of such technology made in connection with the University Deal, and 3) sales of the University Technology (including derivatives) only or sales of products into which such technology is incorporated or along with which such University Technology is distributed.

The University will typically negotiate for provisions that prevent the Strategic Partner from selling the University Technology at a devalued price in order to gain market presence in a certain sector. The University is most seriously exposed to the risk of below-market pricing where the manufacturing or reproduction costs of the University Technology are relatively low. In such cases, or where the University is otherwise concerned that its Strategic Partner will deflate the price of University Technology, the University will typically request a minimum royalty provision. Strategic Partners will often agree to such a minimum royalty provision if the potential revenues arising from a deal are expected to be significant. Alternatively, if such an agreement is not obtained, the parties may often agree to a provision stating that the Strategic Partner may not artificially devalue the price of the University Technology. This provision is usually made more effective by drafting specific examples of prohibited conduct such as shifting fees to services or other products related to, or distributed with, the University Technology for which the University does not receive royalties. If such a provision is coupled with a provision granting the University periodic audit rights, the University may sometimes find this compromise acceptable.

E. Warranties and Indemnities

In University Deals, the parties typically negotiate heavily over the respective warranty and indemnity obligations of the parties because warranty

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and indemnity clauses are the primary means of contractually shifting risks inherent in a University Deal. Although the specific risks associated with a University Deal will depend on its specific terms and the underlying facts, the parties to a University Deal (and most other intellectual property transactions) will usually address three specific risk factors. First, the risk that the University Technology may not function as expected. Second, the risk that the University Technology may infringe upon a third party’s intellectual property rights. Third, the risk that distribution of the University Technology may result in a personal injury or property damage to a third party.

In most cases, Strategic Partners recognize that University Technology is transferred in “raw,” “as-is” form and therefore accept the University’s disclaimer of all performance warranties. However, in high profile transactions, the Strategic Partner is less likely to accept a license in University Technology without warranties and indemnities regarding the University’s ownership of the applicable technology.

Intellectual property warranties and indemnities reduce the Strategic Partner’s potential infringement liability under a University Deal. An intellectual property warranty typically allows the Strategic Partner to terminate a University Deal if the University Technology infringes upon a third party’s intellectual property rights, regardless of whether the Strategic Partner has sustained any actual damage. Additionally, an intellectual property warranty provision generally allows the Strategic Partner to recover any damages sustained due to such an infringement. An intellectual property indemnity typically becomes effective once the Strategic Partner has sustained some damage as a result of a third party infringement claim. Although an indemnity provision does not provide the Strategic Partner with a general termination right, this provision usually requires the University to defend and hold the Strategic Partner harmless (at least up to the University’s cap on liability) against third party claims that the University Technology infringes upon certain intellectual property rights. Because intellectual property warranties and indemnities both reduce its infringement liability, the Strategic Partner will typically negotiate less heavily for intellectual property warranties if it is satisfied that it has an adequate indemnity protection against infringement suits. Consequently, the focal point of intellectual property ownership negotiations in a University Deal will be the degree to which the University will indemnify the Strategic Partner for infringement suits.

In order to reduce the level of negotiation surrounding intellectual property indemnity, the University should clearly decide at the start of negotiations whether it will indemnify the Strategic Partner if the University Technology infringes upon third party intellectual property rights. As is discussed above, the Strategic Partner should also be aware that most state universities are statutorily barred from agreeing to indemnity provisions. Accordingly, if a university will not provide its Strategic Partner with intellectual property indemnity, this issue should be clearly stated at the outset of negotiations and
should be factored into the license fee received by the University.

If, on the other hand, the University is willing to provide an intellectual property indemnity to the Strategic Partner, it will often (i) cover only U.S. intellectual property rights and only U.S. patents and trademarks that have been issued on or before the date of a deal, (ii) limit its liability to a fixed sum (e.g., the amounts received by the University), (iii) not provide such an indemnity unless the Strategic Partner’s liability exceeds a minimum threshold amount, and (iv) only provide such protection for a limited time frame (e.g., the first few years of product distribution). Additionally, the University will often include carve outs that limit its infringement liability to claims that are based upon the University Technology as originally delivered and that permit the University to replace or modify such technology or terminate a license in the event of an infringement claim. Additionally, universities that provide intellectual property indemnities are increasingly purchasing a line of insurance that provides coverage against such infringement and indemnity claims. If the University obtains a quote for such a policy prior to negotiating a University Deal, it will often attempt to recoup its premium costs under the business terms of the deal.

In cases where the University agrees to an intellectual property indemnity, it will typically require a reciprocal intellectual property indemnity from the Strategic Partner for infringement claims based upon modifications to or uses of the University Technology. Similarly, the University will generally require the Strategic Partner to indemnify it for third party claims (such as products liability claims) resulting from the manner in which the Strategic Partner distributes the University Technology. If the Strategic Partner will not agree to such a broad indemnity provision, the University will sometimes compromise and agree to a provision requiring the Strategic Partner to indemnify the University for personal injury and property damage claims resulting from the Strategic Partner’s negligent actions and omissions.

F. Reconciling the Terms of Business Deals with University Policies and Liabilities

In many University Deals, the University does not spend a sufficient amount of time reconciling the terms of a business deal with University policy. The good will between the University and its Strategic Partner can quickly disappear if University policy concerns impacting the terms of the deal are raised for the first time on the eve of executing a transaction. Although the internal policies impacting a University Deal will differ from university to university, University policies in the following areas may often conflict with the terms of a University Deal: 1) the manner in which the parties allocate revenue received by the University under a University Deal (this typically impacts the University’s unrelated business taxable income liability), 2) the manner in which the University distributes royalties received from a University
Deal among inventors and within the University, 3) the amount of time that a professor can spend providing technical support for a University Technology or working as an independent contractor for the Strategic Partner, and 4) the degree to which the University may participate in marketing the University Technology. Accordingly, as with many of the issues discussed above, the amount of time the University and Strategic Partner spend negotiating a transaction can be greatly reduced if University policies on the above subjects are communicated and discussed in the early stages of a transaction.

G. Branding Rights and Obligations Under a University Deal

One of the most valuable assets to a Strategic Partner in a University Deal is often the University’s trademarks and trade names. Most Strategic Partners are aware that a technology product bearing the brand of a research university is likely to have significant credibility in the marketplace. Moreover, Strategic Partners often see a license in a University brand as somewhat of an equalizer for any intellectual property concerns that the partner maintains regarding the University’s intellectual property rights. In short, Strategic Partners often find that even if they cannot prevent other parties from utilizing technology similar to the University Technology, they will have a competitive edge over other parties if they have obtained a license to promote their product with the brand of a research university.

Although Strategic Partners are often quite solicitous of a university’s brand, universities are generally reluctant to grant a trademark license to its licensees for two reasons. First, universities are often understandably concerned that their exposure to products liability claims will be increased if a university technology is distributed bearing the university’s brand. Second, universities are often concerned that repeated commercial use of university’s brand diminishes a university’s academic credibility.

It is worth noting that branding negotiations in University Deals are often exactly the opposite of most commercial licensor/licensee negotiations. Typically, the licensor negotiates to promote its brand and to prevent the licensee from distributing the licensor’s technology in a manner that renders the licensor a “silent partner.” In contrast, universities are often content to act as “silent partners” and negotiate to limit the use of a university brand.

Because branding negotiations in University Deals can be critical terms to both parties and often involve atypical negotiations, the University and its Strategic Partner should discuss each party’s respective branding rights and obligations in the early stages of a transaction. Although the decision of whether to permit a trademark license is typically made based upon a university’s risk management policy and other internal policies, universities that do license their brands are increasingly emphasizing the value of this right in negotiating University Deals. For example, if the University has not carefully protected its patent rights and trade secret rights in a particular
technology, it can often nonetheless attract a Strategic Partner to enter into a University Deal by offering the partner a license to market the technology using the University brand. Second, if the University owns equity in its Start-Up it will often promote the reputation of its Start-Up by licensing the University brand only to the extent it is co-branded with the Start-Up’s marks. Finally, universities may consider charging licensees royalties or annual fees for use of a university’s brand.

H. Limitations of Liability

As is the case in most licensing agreements, a University Deal will typically contain a provision that limits the total liability of each party to amounts due and payable to the University and another provision that disclaims any liability for consequential, indirect, and punitive damages. Many university agreements (and license agreements in general) that are negotiated at arms-length traditionally designate the following three occurrences as exceptions to the aforementioned limits on liability: 1) each party’s indemnity obligations, 2) breach of a confidentiality obligation, and 3) breach of a license restriction.

As a matter of state policy for most public institutions and internal risk management policy for private institutions, the University will almost never agree to an uncapped indemnity obligation. Accordingly, in a University Deal, the Strategic Partner should be prepared to assume indemnity exposure beyond any applicable cap on the University’s liability. Conversely, many public company Strategic Partners will not agree, or will only agree after a prolonged negotiation, to uncapped liability for breach of a contract, including breaches of confidentiality and license restriction provisions. However, a University will rarely concede on this point because doing so effectively permits the Strategic Partner to acquire the University Technology for the liability limit set forth in the applicable agreement. Considering the above facts, both parties should expect to negotiate these points extensively in any University Deal involving valuable technology.

V. Conclusion

Since the enactment of the Bayh-Dole Act, university licensing activity has increased exponentially and, as the Taxol®, Google, and Lycos models demonstrate, has catalyzed the creation of profitable new companies and increased the profitability of established companies. This paper seeks to facilitate partnerships between universities and industry by providing an overview of the primary legal issues impacting the process of transferring university technology to the private sector either directly or through a start-up entity. The more a university and a prospective licensee develop an understanding of applicable intellectual property laws and federal regulations, general corporate issues impacting university deals, and the process of negotiating such deals, the more prepared each party will be to evaluate and
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effectively negotiate the terms of a university technology transfer transaction.