Managing Software Ownership at the University

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Introduction

Cornell University's copyright policy states: "Some materials created at Cornell are both patentable and copyrightable…For material…that is both copyrightable and patentable, the Patent Policy of the University shall govern intellectual property rights in the work."[1] This seems like a practical solution to the problem of how to handle faculty rights in software. Software does not fit neatly within the parameters of material traditionally considered under University copyright policies, especially considering its commercial potential. But the copyright in software is fundamentally different than the patent right,[2] and treating ownership of those rights under the same policy ignores those differences. Universities have taken various approaches to resolving ownership in patentable software, but none appear to consider one of the main differences in patent and copyright protection—the duration and the scope of the rights that are granted to the inventor/author under each scheme.[3]

In other areas of research, this dichotomy between patents and copyrights has been handled separately without much conflict. Biotechnology research produces data, methods, compositions of matter, etc. The University typically owns the patent rights on the inventions and faculty members own copyright in scientific articles they write about the research. In the

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[1] *Cornell University Copyright Policy*, [hereinafter *Cornell Copyright Policy*] available at: www.policy.cornell.edu/cm_images/uploads/pol/Copyright.htm.

[2] *See Mazer v. Stein*, 347 U.S. 201, 217 (stating that "unlike a patent, a copyright gives no exclusive right to the art disclosed; protection is given only to the expression of the idea—not the idea itself").

[3] *Compare* 35 U.S.C. § 154(a)(2) (duration of a patent term is twenty years); 35 U.S.C. § 271(a) (infringement of a patent occurs when one without authorization makes, uses, offers to sell, sells, or imports the patented invention); *with* 17 U.S.C. § 302(a) (duration of a copyright term is the life of the author plus seventy years after the author's

humanities, a professor may write a scholarly article about literature or an actual novel. Both works are copyrightable, and the professor will own the copyright in both. Even though the novel may be considered the result of research applied, as opposed to the research itself, the faculty member retains all rights. In this system, it was easy to allow faculty members to own their copyrights.

Software does not fit these traditional models of University intellectual property ownership. The law recognizes that software is expression, and that there may be more than one way to express the instructions that achieve a particular result.[4] Ownership of copyright in a patentable computer program would not preclude another from practicing the patent once the patent term had run. Someone other than the copyright holder could write new instructions that allow the patented art to be practiced. Therefore, the interest in the expression (the actual program), is not coextensive with the art, and it is not as practical as it may seem to consider ownership of the expression under the University's patent policy.

This paper will examine the ways that Universities have chosen to handle the problem of patentable software. Part I will explain copyright and patent protection for software and how ownership is determined. Part II will review patent, copyright and software ownership policies at a variety of public and private universities. Part III finds that patentable software should be handled individually and proposes some ways in which Universities could address the ownership issues presented by this special case.

I. Intellectual Property Protection for Software

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death); 17 U.S.C. § 106 (the owner of a copyright has the exclusive right to reproduce, prepare derivative works, distribute, perform, display publicly, and transmit the copyrighted work).

Software is protected by both patents and copyright.[5] Traditionally, the issue of ownership in these two areas of intellectual property has been handled differently by Universities. Patent rights from faculty inventions have been assigned and copyrights in scholarly works have remained with the individual authors. This section will examine the dual protection available for software, the rights each category of intellectual property protects, and how ownership of the intellectual property is influenced by common law, statutes and federally sponsored research agreements.

A. Patentability of Software and Patent Ownership

In the last twenty-five years, software patents have been addressed and upheld by the Supreme Court and the Federal Circuit on several occasions.[6] Initially, computer programs were not considered patentable subject matter,[7] but patents have now become a well-established method of protecting software.[8] In *Diamond v. Diehr*, the Supreme Court found that the use of the Arrhenius equation by a programmed computer to determine cure time for rubber is patentable subject matter, even though mathematical algorithms themselves are not.[9] In 1998, the Federal Circuit expanded the scope of patentable software to include use of an algorithm to produce any "useful, concrete, and tangible result."[10] Also, there is no longer a requirement that

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[4] *Apple Computer, Inc. v. Franklin Computer, Corp.*, 714 F.2d 1240, 1253 (3d Cir. 1983) (finding that operating system software would be protected as copyrightable expression, so long as "other programs can be written or created which perform the same function" as the operating system).
[5] *Apple Computer, Inc. v. Franklin Computer, Corp.*, 714 F.2d 1240 (3d Cir. 1983); *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998).
[6] *Diamond v. Diehr*, 450 U.S. 175 (1981) (finding patentable a process for curing synthetic rubber which included a mathematical formula and a programmed digital computer); *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) (finding patentable a data processing system that, using an algorithm, produced a useful, concrete and tangible result in the form of daily allocations of assets for pooled investments); *In re Alappat*, 33 F.3d 1526 (Fed.Cir. 1994) (finding patentable software claims tied to a machine).
[7] *Parker v. Flook*, 437 U.S. 584, 594 (1978).
[8] Scott Elengold, Student Author, *Note: An Inquiry Into Computer System Patents: Breaking Down the "Software Engineer"*, 61 N.Y.U. Annual Survey Am. L. 349, 355 (2005).
[9] *Diamond*, 450 U.S. at 187.
[10] *State Street Bank*, 149 F.3d at 1373.

software claims be tied to a computer in order to be patentable.[11] So long as the patent does not seek to protect an abstract mathematical idea, but rather an application of that idea, there is no §101[12] subject matter bar to the patentability of software.[13]

In the United States, title to inventions vest initially in the inventor,[14] but Universities generally must own patented inventions made by their faculty and staff due to Bayh-Dole requirements. In 2003, federal funding of University research accounted for approximately two-thirds of University research funds.[15] The Bayh-Dole Act provides that inventions made using any federal funds generally belong to the University (subject to § 202(a) limitations),[16] so long as the University follows the § 202(c) requirements, including: (1) disclosure subject inventions to the Federal agency providing funding, and (2) electing title to the invention by filing a patent application prior to any statutory bar.[17] Title to the patent belongs to the University, and cannot be assigned, except to a patent management organization.[18]

In order to comply with Bayh-Dole, a University must have inventors assign title in their inventions to the University. If a University does not elect title, the government retains ownership of the invention.[19] In any given situation, it is uncertain whether a University would

[11] *See In re Beauregard*, 53 F.3d 1583 (Fed. Cir. 1995) (finding no case or controversy after the Commissioner of Patents and Trademarks announced that software claims tied to a tangible medium, such as a diskette, are patentable and that the printed matter doctrine does not apply).
[12] 35 U.S.C. § 101 (2000) ("Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title").
[13] *In re Alappat*, 33 F.3d at 1544.
[14] 35 U.S.C. § 101 (2000).
[15] Association of University Technology Mangers, *AUTM Licensing Survey: FY 2003, Survey Summary* (Ashley J. Stevens & Frances Toneguzzo eds. AUTM 2004).
[16] 35 U.S.C. § 202(a)(i)-(iii) (2000) (providing exceptions for non-United States contractors, declarations of exceptional circumstances, and national security).
[17] 35 U.S.C. § 202(c).
[18] 35 U.S.C. § 202(c)(7).
[19] 35 U.S.C. § 202(c)(2).

obtain ownership of an employee invention pursuant to the work-for-hire doctrine;[20] therefore, a University's assignment agreements and intellectual property policy must ensure University ownership of inventions. Assignment agreements are generally enforceable so long as they are made in consideration of employment.[21] University policy may be enforceable against an employee as well, either through incorporation by an assignment agreement or standing alone, if agreed to in consideration of employment.[22] Individual University invention assignment agreements and policies are examined below.

B. Copyrightability of Software and Copyright Ownership

Copyright law protects "original works of authorship fixed in a tangible medium of expression…from which they can be perceived, reproduced or otherwise communicated, either directly or with the aid of a machine or device."[23] "Computer program" is a defined term under the copyright statute.[24] Section 101 states that "[a] computer program is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result."[25] The actual source code and object code of a computer program is protected under copyright law as a "literary work."[26] Therefore, computer programs satisfy the "work of authorship" requirement of copyright law. The fixation requirement for the code is satisfied by

[20] *Compare Standard Parts Co. v. Peck*, 264 U.S. 52 (1924) (holding that an employee hired to invent has a duty to assign patent rights to an employer even if the employment contract is silent on the issue); *State v. Neal*, 152 So. 2d 590, 592 (Fla. 1943) (holding that a research assistant at a University assigned to a project whose purpose was to study methods of producing dairy feed from citrus waste had a duty to assign his patent rights in such a method to the University); *with St. Bd. of Educ. v. Bourne*, 7 So. 2d 838, 840 (Fla. 1942) (holding that a plant pathologist hired to study plant diseases need not assign patents in new breeds of sugar cane to his employer because he was not hired as a plant genetiscist).

[21] *But see Mirafi, Inc. v. Murphy*, 14 U.S.P.Q. 2d 1337 (1989) (finding unenforceable a confidentiality agreement signed four days after employment began where there was no mention of the agreement when the offer of employment was made and the agreement therefore lacked adequate consideration).

[22] *See U. Pat., Inc. v. Kligman*, 762 F. Supp 1212, 1228 (E.D. Pa. 1991) (holding that it was possible for a jury to find that an employee handbook requiring patents to be assigned was binding as under an implied contract theory where no assignment agreement had been signed).

[23] 17 U.S.C. § 102(a) (2000).

[24] 17 U.S.C. § 101 (2000).

[25] *Id*.

the disk the program is embedded on, including a Read Only Memory ["ROM"] chip[27] and a computer's Random Access Memory ["RAM"].[28] Fixation of the code also satisfies the fixation requirement for the audiovisual displays of the program, also protected as works of authorship.[29]

Some limitations on copyright protection are listed in § 102(b) of the copyright statute.[30] Generally, ideas, methods of operation, and principles are not copyrightable expression.[31] In *Lotus v. Borland*, the court found that a menu command hierarchy is not protected because it is an uncopyrightable method of operation.[32] The court analogized the menu command hierarchy to buttons on a VCR, stating that just because the buttons are arranged in a certain way and given certain labels does not change the fact that the buttons are a method of operating the VCR.[33] Therefore, while some aspects of a computer program's audiovisual display may not be protected,[34] both the code and audiovisual displays associated with computer programs are generally copyrightable.

Copyright ownership initially invests in the author(s),[35] unless the work falls under the statutory definition of a work for hire,[36] in which case the employer is considered the author.[37] University policies on copyright ownership vary. Faculty members often retain all rights in their scholarly works, both because the "publish or perish" obligations of University faculty do not

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[26] *Apple Computer, Inc. v. Franklin Computer, Corp.*, 714 F.2d 1240, 1247 (3d Cir. 1983).
[27] *Id*. at 1249.
[28] *Stern Elec., Inc. v. Kaufman*, 669 F.2d 852, 856 (1982).
[29] *Id*.
[30] 17 U.S.C. § 102(b) (2000).
[31] *Id*.
[32] *Lotus Dev. Corp. v. Borland Intl, Inc.*, 49 F.3d 807, 815 (1st Cir. 1995).
[33] *Id*. at 817.
[34] *Id*. at 815.
[35] 17 U.S.C. § 201(a) (2000).
[36] 17 U.S.C. § 101 (2000).
[37] 17 U.S.C. § 201(b) (2000).

usually implicate work for hire doctrines[38] and because faculty ownership of scholarly works has become an academic tradition.[39] In response to the potential that scholarly works will be considered works for hire under the copyright statute, many schools have implanted University work for hire policies that specifically exclude traditional scholarly works.[40] Therefore, University ownership of scholarly works is usually disposed of according to University policy.

Ownership of copyrightable material other than scholarly works is more complicated. Software falls into this uncertain area, and which rights, if any, are retained by the author may depend on the source of funds, the University policy and whether the software is also patentable. As discussed above, copyright protection in software exists for the source code, the object code, and aspects of the audiovisual display that otherwise satisfy the §102 requirements. These copyrights in software produced with federal funding are not governed by the Bayh-Dole.[41] Instead, the Federal Acquisition Regulations[42] ["FARs"] and the Defense Federal Acquisition Regulations[43] ["DFARs"] govern the rights of a University (and the author) for software produced under government contracts, depending on whether the agency providing the funding is civilian or defense.

Under the FARS, the government has unlimited rights to software first produced under the contract.[44] Unlimited rights consist of the right "to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in

[38] *See Weinstein v. Univ. of Ill.*, 811 F.2d 1091 (7th Cir. 1987) (holding that a scholarly article was not a work for hire under a policy that specifically assigned work was a work for hire, even though there were "publish or perish" obligations).
[39] *Weinstein*, 811 F.2d at 1094.
[40] *Id*.
[41] 35 U.S.C. § 201(d)-(e) (2000).
[42] 48 C.F.R. § 52.227-14 (2005).
[43] 48 C.F.R. § 252.227-7014 (2005).
[44] 48 C.F.R. § 52.227-14(b).

any manner and for any purpose, and to have or permit others to do so."[45] The University may establish claim to copyright either with the express, written consent of the Contracting Officer or if Alternate IV is included in the contract instead of paragraph (c)(1). Even if copyright is claimed, the government still retains rights to a royalty-free, "nonexclusive, irrevocable, worldwide license to the software to reproduce, prepare derivative works, perform publicly, and display publicly by or on behalf of the government."[46]

If a defense agency is providing funding, the DFARs apply. Government rights to software produced under the DFARs depend on the source of funds and whether the software is commercial or noncommercial.[47] If the software is noncommercial and produced entirely with federal funds, the government gets unlimited rights,[48] but if federal funding is mixed with other funding, the government only gets government purpose rights.[49] Unlimited rights under the DFARs are essentially the same as unlimited rights under the FARs.[50] Government purpose rights mean the rights to "use, modify, reproduce, release, perform, display, or disclose computer software…within the government without restriction," and to authorize others outside the government to exercise those rights for government purposes.[51] Any rights the author or the University retain to software produced with government funds are subject to these rights.

The next section will address University policies and assignment agreements, how they handle software ownership, and any problems that may occur given federal statutes, federal

[45] 48 C.F.R. § 52.227-14(a).
[46] 48 C.F.R. § 52.227-14(c)(1), Alt. IV.
[47] 48 C.F.R. § 252.227-7014(b).
[48] 48 C.F.R. § 252.227-7014(b)(1).
[49] 48 C.F.R. § 252.227-7014(b)(2).
[50] *Compare* 48 C.F.R. § 52.227-14(a) ("Unlimited rights," as used in this clause, means the right of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so"); *with* 48 C.F.R. § 252.227-7014(a)(15) (Unlimited rights means rights to use, modify, reproduce, release, perform, display, or disclose computer software or computer software documentation in whole or in part, in any manner and for any purpose whatsoever, and to have or authorize others to do so).

regulations, and the universities desire to license computer programs.

II. Existing University Approaches to Software Protection and Ownership

University research produces software for a variety of purposes—both as the focus of research and as a tool to aid in other areas of research by analyzing research data, operating devices, and simulating experiments. Software may also be developed as part of computer assisted instruction ["CAI"], i.e. Computer Assisted Law Instruction (CALI) and distance learning programs.[52] Much in the way that it is impractical to consider all copyrightable material the same when determining ownership, treating all software that originates with faculty under the same policy fails to adequately address the individual interests involved. Unfortunately, some of this uniformity is imposed by the patent and copyright ownership issues addressed above. This section will look at assignment agreements and/or intellectual property policies at Cornell University, the University of California System, the University of Delaware, Texas A&M University, the University of Michigan and Stanford University.

A. Assignment Agreements

As discussed above, assignment agreements are usually necessary to achieve faculty assignment of title to the University. These assignment agreements often incorporate the relevant University policies as well. Stanford University's agreement covers assignment of both patentable inventions and copyrightable works that fall under one of the five exceptions to

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[51] 48 C.F.R. § 252.227-7014(a)(14).
[52] Roger McHaney et al., *Computer-Mediated Communication Systems*, in *Encyclopedia of Library and Information Science, Vol. 67* 64, 75-76 (Alan Kent ed., Marcel Decker, Inc. 2000).

Stanford's policy that rights in copyright remain with the creator.[53] It incorporates the University's *Inventions* and *Copyright* policies.[54] In contrast, the University of California agreement only covers the assignment of patents, and incorporates the U.C. Patent Policy in order to determine the allocation of rights and equities in disclosed inventions.[55] No assignment agreement is required by the U.C. Copyright Ownership Policy.[56] Whether the policy is enforceable absent a signed agreement depends on whether the University policies were otherwise agreed to in consideration of employment.

B. University Policy

The way these University policies categorize intellectual property varies, and different approaches affect who owns software produced by University faculty in various situations. These policies will be examined to determine: 1) which categories and subcategories of intellectual property the policies create; 2) what external factors are reflected in those categories and subcategories; and 3) whether the academic interests of the faculty in their expression are adequately represented. Most policies contain a clause that limits the faculty's rights pursuant to any external agreements with the federal government or private sponsors.[57] These agreements

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[53] *Patent and Copyright Agreement for Personnel at Stanford*, [hereinafter *Stanford Agreement*] available at: www.stanford.edu/dept/DoR/rph/su18.html.

> "Stanford policy states that all rights in copyright shall remain with the creator unless the work:
> a) is a work-for-hire,
> b) is supported by direct allocation of funds through the University for the pursuit of a specific project,
> c) is commissioned by the University,
> d) makes significant use of University resources or personnel, or
> e) is otherwise subject to contractual obligations."

[54] *Stanford Agreement*, *supra* n. 53.

[55] *University of California State Oath of Allegiance, Patent Policy, and Patent Acknowledgement*, [hereinafter *U.C. Agreement*] available at: invent.ucsd.edu/faculty/policies/06c_upay585.pdf.

[56] *U.C. Copyright Ownership Policy*, [hereinafter *U.C. Copyright Policy*] available at: invent.ucsd.edu/faculty/policies/UC_copyright.htm.

[57] *See e.g. Cornell University Copyright Policy*:

> "*Subordination to Other Agreements*: Copyright ownership of all material that is developed in the course of or pursuant to a sponsored research or other agreement to which the University is a party shall be determined in accordance with the terms of the sponsored research or other agreement."

[hereinafter *Cornell Copyright Policy*] available at: www.policy.cornell.edu/cm_images/uploads/pol/Copyright.htm.

may limit faculty rights, but the best way to avoid conflict is to keep effected faculty members aware of the ways the terms of the agreements will limit their individual rights. Absent these external obligations, the following policies govern ownership of patentable software in a variety of ways.

Commonly, a University has separate patent and copyright policies, and then either allows them to exist separately,[58] resolves conflicts in favor of the patent policy,[59] or treats copyrightable works that are also patentable under the patent policy.[60] Cornell's Copyright Policy, mentioned above, and the Texas A&M System Intellectual Property policy represent the latter of the three. Cornell's Patent Policy states that "all patentable inventions conceived of or first reduced to practice…in the conduct of University Research shall belong to the University."[61] Therefore, patentable software at Cornell belongs to the University. The same result occurs under Texas A&M's policy, which treats patentable software as an invention (defined as potentially patentable subject matter).[62] The University of California System's policy performs essentially the same function by resolving conflicts in favor of the patent policy depending on how the school defines "conflict."[63] In the case of patentable software, a conflict may arise as to ownership of the copyright if the University wishes to license the patent, and therefore the University would own the copyright as well.

Stanford University's policies do not address patentable software specifically, although unpatentable software is included in the list of copyrightable works of which a faculty member

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[58] *Stanford Copyright Policy*, available at: www.stanford.edu/dept/DoR/rph/5-2.html; *Stanford Inventions, Patents and Licensing*, [hereinafter *Stanford Patent Policy*] available at: www.stanford.edu/dept/DoR/rph/5-1.html.
[59] *U.C. Copyright Policy*, *supra* n. 56.
[60] *Cornell Copyright Policy*, *supra* n. 57.
[61] *Cornell University Patent Policy*, [hereinafter *Cornell Patent Policy*] available at: www.policy.cornell.edu/cm_images/uploads/pol/Patent.html.
[62] *Texas A&M System Management of Intellectual Property*, [hereinafter *Texas IP Policy*] available at: sago.tamu.edu/policy/17-02-01.htm.
[63] *U.C. Copyright Policy*, *supra* n. 56.

traditionally retains ownership.[64] It is uncertain how Stanford would handle the expressive component of patentable software, but given the inclusion of unpatentable software in the copyright policy, it seems the entire bundle of intellectual property rights would be handled in the same manner as that prescribed by Cornell's policy. All three of these systems for handling patentable software create artificial distinctions between patentable software and unpatentable software. Patentable software still has copyrightable, expressive elements that are not necessarily superseded by patents on the same program.[65] By ignoring the copyrighted expression completely, the University fails to appreciate rights that an author may retain an interest in after the patent and/or economic life of the software expires.

The University of Michigan requires all software to be disclosed.[66] Following disclosure, the inventors (which include authors under the policy) and a tech transfer office are to reach a joint decision on the appropriate option for commercialization—licensing or reassignment of ownership to the inventors.[67] In theory, a faculty member will be able to plead their case for ownership.[68] If the software was produced using public or private funding, obligations in the research agreement (or Bayh-Dole obligations) must be considered. But absent such an agreement, it is uncertain what guidelines would govern such a reassignment. Also, there is little incentive for a faculty member to exercise this option if the University has invested any money into patenting or licensing the software because the faculty member must reimburse the University.[69] Also, a faculty member who elects this option must pay a 15% royalty back to the

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[64] *Stanford Copyright Policy*, *supra* n. 58.
[65] *But see Apple Computer, Inc. v. Franklin Computer, Corp.*, 714 F.2d 1240, 1253 (3d Cir. 1983) (finding that software would be protected as copyrightable expression, so long as "other programs can be written or created which perform the same function" as the software).
[66] *University of Michigan Revised Policy on Intellectual Property*, [hereinafter *Michigan IP Policy*] available at: www.techtransfer.umich.edu/inventors/policies.html.
[67] *Michigan IP Policy*, *supra* n. 66.
[68] *Michigan IP Policy*, *supra* n. 66.
[69] *Michigan IP Policy*, *supra* n. 66.

University for any future income derived from the software.[70] All of these obligations occur regardless of whether University resources were even used, whether any use was substantial, and whether the software is patentable.

None of these policies adequately represent the faculty's interest in their expression. The next section will propose a solution to the problem of patentable software, modeled after one school's computer software policy—the University of Delaware.

III. Solution for Managing Software Ownership—The University of Delaware Policy

While University policy must allow the school to comply with federal regulations and the terms of sponsored research agreements, distinctions made between patentable software and unpatentable software are often not justified. Always treating software that is both patentable and copyrightable under a patent policy by default ignores not only the conceptual differences between copyright and patent protection,[71] but also the practical differences as well.[72] Copyright protection for a computer program may exceed patent protection of the same program by at least fifty years. The University's interest is misrepresented by these policies, which in turn underestimate the faculty's legitimate interest in their expression.

In addition, the statutory life of copyright, especially in software, may far exceed its economic life.[73] According to one source on valuation of intellectual property, the economic life of software may be as short as one year for specific projects, while core projects may have an

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[70] *Michigan IP Policy*, *supra* n. 66.
[71] *Compare e.g.* 35 U.S.C. § 101 (stating that processes, machines, and articles of manufacture are patentable); *with e.g.* 17 U.S.C. § 102(b) (stating that procedures, processes, systems, methods of operation, and discoveries are not copyrightable).
[72] *Compare e.g.* 35 U.S.C. § 154(a)(2) (duration of a patent term is twenty years); *with e.g.* 17 U.S.C. § 302(a) (duration of a copyright term is the life of the author plus seventy years after the author's death).
[73] Gordon V. Smith & Russel L. Parr, *Intellectual Property: Licensing and Joint Venture Profit Strategies*, 166 (3d ed., John Wiley & Sons, Inc. 2004).

economic life of ten to twelve years.[74] Therefore, while the rights associated with the copyright in a program have a longer lifetime than the author, the University's economic interest in the program most likely will not. Creation of derivative works is an exclusive right of a copyright holder.[75] A faculty member may retain an interest in such a right after the patent expires. He or she may wish to invent improvements on the patented invention that is now in the public domain, and use copyright in the original programs as authorization to create derivative works. There is no way to predict the various reasons faculty may want to recapture or retain copyright in software, but university policy should reflect this potential and encourage further innovation.

The University of Delaware has a specific policy devoted to rights in computer software.[76] The policy begins with the premise that all rights in computer software stay with the originator (with exceptions) and acknowledges that much of the software generated at the University is of interest only to the originator, or to a wider circle for academic interest only.[77] Because there is no market potential for the software in these circumstances, the school does not require a formal determination of ownership.[78] The originator does have a duty to affix copyright notice on the software if it is distributed in order to protect certain rights in the work,[79] but beyond that, disclosure is only required when the originator realizes that the software may have commercial value.[80]

The University of Delaware approach is admirable and more adequately addresses both the reality of software development and research and the interest of faculty members in their

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[74] *Id*. at 168.
[75] 17 U.S.C. § 106(2).
[76] *University of Delaware Policies and Procedures Manual: Computer Software*, [hereinafter *Delaware Computer Software Policy*] available at: www.udel.edu/ExecVP/polprod/6-09.html.
[77] *Delaware Computer Software Policy*, *supra* n. 76.
[78] *Id*.
[79] *See e.g.* 17 U.S.C. (stating that copyright notice on a copy will preclude a defense of innocent infringement in mitigation of actual or statutory damages).
[80] *Id*.

expression. The presumption of faculty ownership in software should be standard for any computer software policy. In the same way that faculty members are not hired to invent, they are not hired to write software either. Also, writing software may or may not require the substantial use of University facilities, and there are many occasions where it may not. These decisions should be made on an individual basis. And, as a practical matter, it should be unnecessary for faculty to disclose software that has no identifiable commercial value or is not considered by the author to be a finished product. In this way, the University of Delaware computer software policy can serve as a model.

Once software is disclosed at the University of Delaware, ownership is determined according to the category of work the software falls into.[81] Work conducted independently by university personnel is owned by the originator. The University obtains royalty-free rights to copy and use the work for research and teaching. Work financed with funds administered by the university or which has involved the significant use of university facilities, equipment, materials, or specialists and in which the university and originator are the sole parties in interest may still be released to the originator if it is not found to be of interest to the University. Otherwise, it is assigned to the University. Work financed wholly or in part by government funds will be disclosed to the funding agency who will then determine ownership between the University and the agency. Should the software rights be released to the University, ownership will be determined according to whether the University has an interest in the software. If not, it will be released to the originator. Work financed by private funds is handled much in the same way, except the terms of the agreement will govern rights to the software between the sponsor and the University.[82]

[81] *Delaware Computer Software Policy*, *supra* n. 76.
[82] *Delaware Computer Software Policy*, *supra* n. 76.

The University of Delaware policy recognizes that the "work-for-hire" doctrine may be construed broadly ("a work prepared by an employee within the scope of his or her employment"), and will release works to the originator upon request so long as the University has no basis for claiming rights in the software.[83] While this may or may not be an accurate portrayal of the scope of the "work-for-hire" doctrine, it does provide another layer of protection for faculty expression. In all cases where the University releases rights of disclosed software, the University retains a royalty-free right to copy and use the software for research and teaching purposes.[84] If the University would otherwise own the software but grants a request to release it, the grant may be made conditional on sharing in income received by the originator.[85]

This policy sufficiently represents the University's interest in supporting new research by attracting resources through technology transfer and complying with sponsored research agreements that are already in place. This is accomplished without detracting from the faculty's unique interest in software. The policy does not require assignment in the case of potential patentability or other contractual duties, but instead requires assignment only if there are actual contractual duties. Disclosure is required only if the originator believes it has commercial value. These factors create a climate in which faculty are encouraged to develop, share, and improve software, allowing a still new technology to develop without policy restrictions that inhibit innovation through arbitrary categorization.

The Delaware policy is not perfect. It requires active communication between those on campus who manage the sponsored research agreements to ensure that faculty know when they are using outside funding, especially any government contracts that do not contain Alternative

[83] *Delaware Computer Software Policy*, *supra* n. 76.
[84] *Delaware Computer Software Policy*, *supra* n. 76.
[85] *Delaware Computer Software Policy*, *supra* n. 76.

IV. In those cases, disclosure requirements to the agencies may exceed the faculty's disclosure requirements to the office of sponsored research. But with effective management of funds, conflicts should be avoidable. Any new policy governing computer software should take into consideration the climate of the campus and the faculty's actual interest in their expression.

Conclusion

Computer software is a rapidly growing industry, and while traditional intellectual property frameworks have been used to protect software, traditional intellectual property ownership policies may not be so adaptable. Given the varied applications of software, there is no way to create University guidelines that will adequately address every possibility. A good start is to set policy that specifically address the unique issues concerning ownership of software, and not to be so conservative in doing so that the copyrights sacrificed to secure patent rights. Software is expression, and some software engineers believe that protection of this expression using copyright is alone sufficient, and may be better suited, to protect software.[86] While that debate is outside of the scope of this paper, it seems inappropriate to treat copyright protection of patentable software as second class when some believe over-patenting may discourage innovation in the software industry. A University computer software policy addressing all rights associated with software and all interests involved, tailored to the University climate, will ensure that such an innovative field will continue to grow.

[86] For example, Oracle submitted this opinion to the hearings on software patentability at the US Patent Office in 1994.