



INTELLECTUAL PROPERTY—draft report for comment

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RECENT DEVELOPMENTS IN CAMPUS INTELLECTUAL PROPERTY POLICIES

Tensions over faculty control of the fruits of their scholarship have been slowly building since the 1980s, but they have also intensified since late 2011. There have long been differences of opinion over ownership of patentable inventions, but over the last two years an number of universities have categorically asserted that they own these products of faculty research. And there is increasing evidence of institutional interest in declaring ownership of faculty intellectual property subject to copyright as well. The most notable example of the latter is those universities that demand full ownership of online courses and other instructional materials, a trend that did not begin escalating until the 2012-13 academic year.

We are issuing this report in the midst of these fundamental changes in the character of faculty rights and academic freedom. Our purpose is to put the dialog on intellectual property on a new foundation, one that leads to a principle-based restoration of faculty leadership in setting policy in this increasingly important area of university activity. Administration efforts to control the fruits of faculty scholarship augur a sea change in faculty employment conditions, one too often imposed without negotiation or consent. Indeed the underlying logic behind these developments is an administrative conviction that faculty are not independent scholars, teachers, and researchers, but rather employees no different from those working in for-profit corporations that exist for the benefit of investors.

The trends we address are moving targets. New developments occur almost weekly. Thus, for example, in May 2013 the University of Pennsylvania issued a draft policy declaring that faculty members could not decide to design and offer an online course through an outside company without university permission. The draft policy makes it clear that Penn could refuse permission because it wants curtail potential competition with its own online offerings. Given such tends toward administration control of traditionally faculty-owned copyrighted work, one may note the same reasoning could apply to a faculty member expecting to issue a potentially profitable book with a commercial press, since a university could insist that its own press publish the book instead, or that the institution must negotiate the contract with the commercial press and take a share of the income for doing so. Penn's draft policy also makes it clear that it wouldn't matter if the faculty designed

the course on his or her own time. The mere fact of employment now apparently trumps the deeply rooted expectation of faculty independence.

This report begins with some basic definitions, then introduces the key issues at stake. A section summarizing the history of patentable and copyrightable IP university policies follows. Finally we offer 10 very specific principles that universities ought to include in handbooks or collective bargaining agreements to clarify IP policies.

Much of this report is adapted from *Recommended Principles to Guide Academy-Industry Relationships*, a book-length study that the AAUP Foundation will publish early in 2014; the book will be distributed by the University of Illinois Press.

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I. DEFINITIONS

The management of inventions, patents, and other forms of intellectual property (IP) in a university setting warrants special guidance because it bears directly on the university's core values, including principles of academic freedom, scholarship, research, shared governance, and the transmission of knowledge. These core values distinguish university activity from that of government and industry, and provide the argument for public support of research and the role of the university as an independent contributor to and commentator on both policy and commerce. The negotiation and management of faculty-generated IP can be complex and carry significant consequences for those directly involved in negotiations (faculty investigators, inventors, and authors, companies, university administrators, attorneys, invention management agents) as well as others who may be less directly affected (competing companies, the public, patients, and the wider research community).

Intellectual property refers broadly to patents, copyrights, trademarks, and (according to some definitions) trade secrets.¹ In common usage the term also refers to the underlying subject matter that is controlled by the owner of these property rights (inventions, works of authorship, and identifiers that distinguish goods and services in the marketplace). Patents provide the owner with the right to exclude others from "practicing" (making, using, and

selling) an invention. A patent, unlike a copyright, goes beyond the protection of written expression to accord an exclusive right to the operational principles that underlie the invention. Unlike the case of copyright, where exclusions are triggered by unauthorized copying or modification of particular instances of expression, a patent permits the exclusion of work created independently, is not limited to the precise “expression,” and has no “fair use” exception, even for non-profit purposes. Thus patents may have a substantial impact on university research, may affect the value and role of scholarly publication, and may influence collaborations and the transfer of technology developed or improved in other research settings. Recognizing the potential for harm the faculty of a number of medical schools for years prohibited the patenting of inventions pertaining to public health.

Patents may cover new, useful, and non-obvious inventions, which are categorized by patent law as processes, machines, manufacture, and composition of matter. As such, patentable inventions may span a wide range of results of academic work, including devices, chemical compounds, biological materials, research methods and tools, production processes, software, and other new products. Design patents cover new designs of useful articles. Plant patents and related plant variety protection laws cover reproducing, selling, or using patented plants. Patents are acquired by an application that is reviewed by a patent examiner; the process may take up to three years. A patent has a term of twenty years from the date of application.

Trademarks distinguish goods and services in the marketplace and are classed as trademarks, service marks, certification marks (showing testing by an independent laboratory, for instance), and collective marks (identifying membership in an organization, such as real estate agents). Trademarks may be common law, that is, acquired by use in commerce, or registered at the state or federal level. A trademark remains in existence as long as it is being used. In academic settings, names, logos, and tag lines for assets such as software programs, research laboratories, new techniques, services offered by departments, web sites, and programs of research may all come to have trademark status.

Copyright encompasses original works of authorship fixed in any tangible medium of expression. Copyright vests in a work when it meets these requirements of the law; no application or registration process is now required. Classes of copyright-eligible subject matter include literature and other printed matter, architectural or engineering drawings, circuit diagrams, lectures and other instructional materials, musical or dramatic

compositions, motion pictures, sound recordings, choreography, computer software and databases, and pictorial and sculptural works. Copyright now has a term of the life of the author plus 70 years, or in the case of work made for hire, 95 years from the date of first publication or 120 years from the date of creation of the work, whichever is shorter.

These lists are not exhaustive. The scope of work subject to IP claims has expanded considerably over the past thirty years, both as a matter of changes in law as well as changes in university policies. As well, the term of copyright has been extended and registration formalities removed. Thus, even where university IP policies have not changed, the range of faculty-led work subject to these policies has expanded, changing and complicating the landscape for discussions of the appropriate role for institutional controls on scholarship and the responsibilities to the public of faculty authors, inventors, and entrepreneurs.

II. WHY DOES INTELLECTUAL PROPERTY MATTER?

Whether ownership of a particular invention resides with the inventor, or is assigned by the inventor to an organization for management (such as a university TTO, an affiliated foundation, or an independent invention management agency), all those involved need to recognize the distinctive role played by inventions emerging from scholarly research. Faculty investigators and inventors, together with university administrators, must recognize this role and shape their policies and practices in the development and deployment of patent rights accordingly.

One fundamental principle is clear: Inventions are owned initially by their own inventors. That principle is established in both the US Constitution and federal patent law. As the US Supreme Court affirmed in its 2011 decision in *Stanford v. Roche*, federal funding of faculty-led research does not change this principle: inventors in a university setting using federal funds are also owners of their inventions. Universities as hosts of federally supported research have neither an obligation nor a mandate under federal law to take ownership of faculty inventions made in such research. Ownership of patent rights attached to an invention, however, may be transferred to another party by a written instrument signed by the inventor. Control of patent rights can be distinguished from ownership. A patent owner may contract with (or transfer title to) another entity to manage those patent rights on the owner's behalf. Furthermore, a patent owner's invention may

include elements that are subject to the patent claims of others, and therefore the owner and any of the owner's licensees may not be able to practice the invention without a license from other patent holders. A university may become the owner of patent rights via voluntary assignment by a faculty inventor, as was the case at most universities prior to the Bayh-Dole Act of 1980.

Some universities have sought to make their ownership of all faculty patent rights a general condition of employment, which implies that the university controls faculty scholarship as an employer, and that faculty are expressly hired to invent. Some cite use of university facilities as a justification for asserting their ownership or claim that participation in externally funded research requires that the university must own the resulting IP. Though these strategies are increasingly preferred by many universities, there is little to indicate that such ownership claims advance university interests, whether taken narrowly as the pursuit of income from patent licenses or broadly in terms of the social value of research and broad access to its results.

One fundamental problem with university ownership of patent rights to faculty inventions is that it creates institutional conflicts of interest between the university's governance role and its own financial and competitive interests in exploiting patented inventions. This institutional conflict is particularly challenging to manage because it is easy for universities to conflate royalty income from the use or manufacture of patented inventions with their public service mission to enhance economic growth—thus failing to perceive or acknowledge the conflict that arises with other institutional responsibilities and the university's longstanding commitment to the broad dissemination of knowledge.

When faculty inventors and university administrators agree to use patents only for defensive purposes, and to allow general access to technology platforms and make them readily available for adoption, there is generally minimal institutional conflict of interest. But when an invention is used to seek financial gain by exploiting monopoly marketplace positions—as necessary as this may be at times—faculty inventors and administrators alike find themselves institutionally in a far more conflicted position. Then it may be beneficial for the university and the faculty inventor to use an external invention management agent to promote development of the underlying invention while simultaneously protecting continued use of the invention in ongoing research and education.

Despite distinctions often drawn in university policy statements, inventions are a natural outgrowth of scholarly activities, and have enjoyed a symbiotic role in faculty research for over a century. As patent law has expanded what is patentable to include software, business methods, and biological materials, results of scholarly activity have become more exposed to ownership claims based on patents. The scholarly nature of university-based inventions does not simply disappear with the addition of a potential patent or other IP rights. A patent is simply a specialized way of transmitting knowledge to society, teaching a new invention to the world in exchange for limited rights to exclude others from practice, in order to promote investment, development, and exploitation of the invention. Thus patented inventions and other discoveries subject to IP protection should properly be viewed as extensions of scholarship subject to the principles of academic freedom and faculty rights, just as are copyrights in manuscripts prepared by faculty. Patents are regularly used in industry to exclude others from using inventions. But faculty members should often be focused instead on creating conditions that give the public access to inventions, regardless of the possibility that a monopoly position might attract more payment to the university for granting an exclusive license. It is a rare university-hosted invention that absolutely must enjoy a monopoly in order to attract investment necessary to be used and developed by those learning of the invention.

Commercial development of university knowledge to stimulate economic growth and bring public benefits is unquestionably good. But some administration practices associated with patenting and licensing operations may negatively affect economic growth as well as scholarship, the public interest, and the university's educational mission.² These include narrow exclusive licensing, speculative reselling and relicensing of patent rights, assert licensing (in which an offer to license is preceded by a claim of possible infringement), trolling activities (in which litigation is considered the primary means to realize the value of a patent), and aggressive reach-through provisions (which claim an interest—ownership or license—in inventions and other developments made with the use of a licensed invention). Other activities associated with commercialization may be consistent with scholarship and academic norms, particularly when broad access to university inventions and research is protected through fair, reasonable, non-exclusive licensing, especially where practice of the invention does not require any product to be developed, as is the case with many inventions that are methods. In any case, it is important that the university or other licensing agent

make an explicit dedication of rights for research and experimental practice. Faculty investigators and inventors must have a strong voice in decisions involving patent management. A university administration and its faculty collectively also have an obligation to ensure that both institutional and individual interests in using patents to seek financial and logistic advantages are conducted within the context of (and remain subordinate to) the university's broader scholarly and public research missions.

Both IP contracting and licensing may be managed directly by the university or through one or more outside agents (such as a research foundation working under contract with the university, or a private invention management agency). Licensing is also regularly undertaken by inventors acting privately, as with open source software. When negotiating sponsored research agreements, a university administration and its invention management agents must address the management of IP and proprietary matter that may be provided by the sponsor, as well as the disposition of any inventions or discoveries that may arise in the course of the sponsored project (including intended deliverables, unexpected discoveries, or findings entirely unrelated to the sponsor's commercial goals).

University administrators and faculty can also make research funded by the federal government and other sources available and managed for public benefit. This might occur through broad dissemination of the research (as happened with the Cohen-Boyer gene splicing technique developed at UC San Francisco and Stanford that launched the biotechnology revolution) or through more targeted exclusive licensing, which gives one firm—say, a pharmaceutical company—monopoly rights to a discovery provided that the company invests the substantial resources required to develop the discovery into a viable new drug.

Finally, a university's non-profit status and its reliance on public funding mean that its management agents are responsible for upholding high academic, educational, and research standards and obligations. These obligations necessarily shape the opportunities that may be considered by faculty and administrators in their choice of licensing models, invention management agents, and acceptable licensing terms and practices.

The keys to proper IP management are consultation, collaboration, and consent. A commitment to consultation does not guarantee that invention licensing and management negotiations will be easy, but it does promote a system of checks and balances that can potentially produce better overall results. Any of the parties to such negotiations can

exercise bad judgment. Faculty may have a sound understanding of the science and technology underlying their inventions but be unable to gauge their usefulness to industry or marketability. University technology transfer offices, on the other hand, may understand the legal and technical logistics but not the underlying science with its uncertainties and thus may also overstate an invention's commercial value and misjudge how to disseminate it most effectively. Each party in these negotiations (a university technology transfer office, a sponsoring company, or a faculty member) can be motivated by the narrower goal of maximizing profits and fail to consider the best interests of the public. That is one reason why faculty collectively, through their governing bodies, need to be involved in setting policy, and why Principles 11 through 13 are interdependent and equally necessary.

The dangers in having institutions or their agents exercise unilateral authority over patenting and other IP negotiations are illustrated by a cautionary tale summarized by Siddhartha Mukherjee in his 2010 book *The Emperor of all Maladies: A Biography of Cancer*. In the late 1980s, Brian Drucker, a young faculty member at Boston's Harvard-allied Dana-Farber Cancer Institute, was investigating chronic myelogenous leukemia (CML), a disease that affected only a few thousand people annually but was incurable and had only a three to five year life expectancy after diagnosis. Drucker wanted to determine whether drugs might intervene in the cancer's genetics. Ciba-Geigy scientists had synthesized a number of promising compounds now held in the firm's freezer in Basel, Switzerland. Drucker proposed a collaboration between Ciba-Geigy and the Dana-Farber Cancer Institute to test those compounds in patients but, according to Mukherjee's account, "the agreement fell apart; the legal teams in Basel and Boston could not reach agreeable terms . . . scientists and lawyers could not partner with each other to bring these drugs to patients."³ It was not until Drucker moved to Portland's Oregon Health and Science University in 1993 that he was able to get independent authority from an academic institution to move his research forward.

One of the Ciba-Geigy compounds showed dramatic results in the lab, but because CML afflicts only a few thousand patients a year in the US the company questioned whether it was worth the investment. Ciba-Geigy had meanwhile fused with Sandoz to form Novartis, and eventually the new company agreed to synthesize the experimental drug—Gleevac—for patient testing. The results were dramatic: Drucker witnessed dozens of deep remissions. Today the drug is so effective that the cumulative number of surviving patients is significant: "As of 2009, CML patients treated with Gleevac are expected to survive an

average of thirty years after their diagnosis . . . within the next decade, 250,000 people will be living with CML in America.”

As this account reminds us, faculty and administrators can fulfill an important shared governance role by collaboratively establishing the university-wide protocols that will manage faculty inventions so they simultaneously protect the best interests of the faculty, the university, and the national science and research communities, while promoting technological innovation, public health, economic development, and the public good. The AAUP recommends that faculty senates, together with their university administration, consider adoption of Principles 11-20 below to ensure that academic inventions and IP management advance all these goals while protecting academic freedom.

III. THE STRUGGLE OVER FACULTY IP

Current disputes over faculty IP have their roots in several trends and events. Declining state funding for higher education has led public universities to seek new revenue streams, including seeking royalties from the licensing of faculty inventions. Unfortunately, for many universities the licensing effort does not break even on its expenses, and where there is licensing income, it is not used to offset costs in education but rather is used to supplement research budgets, which may actually create even more demands on administrative resources. More recently the impulse to seek profits from faculty work has been extended to instructional materials. The long term effects of landmark congressional legislation designed to stimulate campus-based R&D have also come to a head over the last two years, dramatically increasing administration efforts to control faculty IP. The key legislation begins with a bill sponsored by Senators Birch Bayh and Robert Dole, known as the Bayh-Dole Act (1980). Legislation continued with an R&D tax credit (1981, enhanced in 1986); and relaxed antitrust rules for R&D joint ventures (1984). But above all it is Bayh-Dole and its aftereffects that have borne fruit in current controversy.

The Bayh-Dole Act addresses inventions and associated patent rights, not other forms of intellectual property. It established a uniform policy across all government agencies with regard to the procurement of inventions by federal agencies in federally supported research at universities, nonprofit organizations, and small businesses. The Act did not mandate either that universities own, or have a first right to own, inventions made with

federal support, or that they need to commercialize such inventions. It did require universities to honor the conditions of a standard patent rights clause to be developed by the Department of Commerce for use in all federal funding agreements. That standard rights clause instructs universities to require their research personnel to make a written agreement to protect the government's interest in any inventions they may make.

The written agreement—under the standard patent rights clause, to be required by universities of their research personnel—provides: 1) that faculty notify their university when they have made an invention with federal support; 2) that faculty (as initial owners of their inventions) sign documents allowing patent applications to be filed when the owner of the invention, which may be the government or an invention management agent, desires such an application to proceed; 3) that the inventors sign documents that establish the government's rights in their inventions, which may include assignment of ownership or granting the government a non-exclusive right to use an invention developed with federal funds. The latter requirement assures federal agencies that they have access to federally funded inventions for government purposes.

These requirements were spelled out in a patent rights clause that Bayh-Dole authorized the Commerce Department to create. Universities—including the entire University of California system—have tried to claim that the only way they can guarantee that faculty will honor these responsibilities is by taking ownership of all faculty inventions, but obviously there are contractual alternatives to what amounts to a wholesale institutional grab of significant developments of faculty scholarship. Indeed faculty have long been able to honor these requirements without assigning their IP rights to the university. Bayh-Dole also carefully avoided dictating to universities and faculty alike what patent rights they might be interested in or how these rights might be used—whether dedicated to the public, licensed non-exclusively, licensed exclusively, or held so the university could develop an invention directly.

Nowhere does the Act mandate university ownership of faculty inventions. Indeed until a university intervenes—except for the requirement of the written agreement, which confirms the delegation of personal responsibility to potential inventors—the operative relationship is between the government and the inventor. It is only when a faculty

member chooses to assign rights to another agent, such as the university, that Bayh-Dole's complexities come into play.

Nevertheless, over the course of thirty years US university patent managers came to interpret the Bayh-Dole Act as granting them automatic ownership rights to all federally supported inventions generated on campus, including the right to license this IP to industry and others in exchange for royalties, equity, and other fees. The US Supreme Court, however, in a landmark 2011 decision—*Board of Trustees of Leland Stanford Junior University v. Roche Molecular Systems, Inc. (Stanford v. Roche)*—offered a different interpretation of the Bayh-Dole Act. The court firmly rejected the claims by Stanford and other institutions favoring federally sanctioned, compulsory university ownership of faculty research inventions.⁴

Stanford had sued Roche in 2005, alleging that Roche's kits for detecting the human immunodeficiency virus (HIV) infringed university patents. After years of litigation, Stanford pushed its case to the highest court, with support from other universities, including many major research universities, who saw the case as an opportunity to secure court endorsement for their interpretation of Bayh-Dole.⁵ In an amicus brief filed on behalf of Stanford, the Association of University Technology Managers (a professional organization representing university licensing staff) and the Association of American Universities (an association of 62 top research universities), joined by six other research associations and five dozen universities, argued that Bayh-Dole has been "incredibly successful in stimulating innovation by giving universities certainty regarding their ownership of federally funded inventions." The brief went on to argue that Bayh-Dole vested ownership of inventions made with federal funds in the university that contracted to do the research: "Where, as here, a university elects to exercise its right under Bayh-Dole to retain title to an invention, the individual inventor cannot assign that invention to a third party because the invention is assigned, by operation of law, to the university."⁶

But the Supreme Court in its ruling refuted this interpretation of the law. For while it is true that Bayh-Dole requires universities to secure faculty agreement to protect and honor *the US government's interest* in federally funded inventions, the Court concluded there was nothing in the act that automatically vests title to faculty members' own inventions in their university employers. Nor does the act require faculty to assign their inventions to their universities or any other agent for management.

In its own successful amicus brief, the AAUP elaborated on this very point, arguing that Bayh-Dole does not alter the basic ownership rights granted to inventors by law. Rather it helps bring inventions forward to benefit the public by clarifying that government agencies are to allow certain assignees of federally funded inventions to retain ownership, if and when they come to accept ownership, provided they meet various requirements to protect the government's interest, and the public interest.⁷ The high court agreed, ruling that US patent law has always favored, and should continue to favor, the rights of individual inventors, and that universities need a written assignment from researchers to establish ownership of their inventions.

The AAUP considers *Stanford v. Roche* an important victory for faculty rights. The Supreme Court decision demonstrates once again that academic researchers and inventors remain, as they have traditionally been, much more than mere employees of their institutions, recognized by the respect afforded them by the federal government in its contracting with universities. Arguments underlying the compulsory assignment of faculty IP to university employers (which continue to be advanced by Stanford, AAU, AUTM, and many university administrations) begin with the assumption that faculty are no different from corporate employees who owe their employers the fruits of their labor. But the AAUP's 1915 "Declaration of Principles on Academic Freedom and Academic Tenure" anticipated and firmly disputed that claim. The declaration observed that faculty could not maintain academic freedom and the ability to serve the interests of society as truly independent experts and academic scholars unless they were recognized as "appointees," not corporate employees.

It is now well established, indeed few academic administrators would disagree, that academic freedom firmly secures faculty members' rights to direct and control their own scholarly research and classroom instruction. By attempting to force assignment of faculty research inventions and, more broadly, intangible assets in any form, to universities (as university administrations frequently do today), the institutions are effectively arguing that faculty lose academic freedom the moment they become inventors, at which point their scholarly autonomy is lost and they become mere employees. The argument amounts to an assertion of employer control over faculty research, including the dissemination and possible future uses of academic research discoveries and results. Such a claim is as objectionable for faculty research as it is for classroom instruction. It is also objectionable to other types of

investigators who may be formally recognized and named as inventors of academic discoveries, such as postdoctoral fellows and students, who should never be expected to give away such rights wholesale to their universities.

Of course professors (and other kinds of academic investigators) may choose to negotiate separate contractual agreements with their universities outside of their normal teaching, research, and scholarly responsibilities. These agreements typically involve the performance of optional tasks that may be expressly identified in advance as “works for hire,” in which university ownership claims to resulting IP may be reasonably included by mutual agreement. Such a situation might arise, for example, if a professor voluntarily consents to signing a discrete “work for hire” contract to develop a new online course, which permits the university to own and distribute that course through its online education division. This is altogether different, however, from the current situation where universities are claiming automatic, broad ownership rights to all IP developed in the course of faculty’s ordinary and continuing research, scholarship, and teaching. Such claims pose a direct challenge to academic freedom because they undermine faculty members’ ability to control and direct the dissemination of their research.

That said, it is altogether inappropriate to *require* a faculty member to cede ownership of a course to the university merely because the course is prepared in a format suitable to on-line presentation. Faculty members who do so should realize they may be signing away to the university their right to modify the course or control its performance. The university may modify the course or assign it to someone else to teach or change the attribution of authorship. The major national outlets for MOOCs are so far apparently not demanding ownership of university-based courses. Nor do they require universities to assert ownership. University administrators are simply exploiting this as an opportunity to take ownership of faculty instructional IP, when all that is needed is for a faculty member to grant permission to the university to host a course in an online program.

Contrary to the emerging pattern of coopting faculty instructional IP, an April 2013 memo from the California State University Long Beach administration established an interim agreement for faculty applying for 2013 internal grants to support development of online courses, using a very different approach to define a principle that could be widely adopted:

the faculty member shall retain ownership of all works he or she produces for . . . online instruction. Thus, in the absence of a separate, written ‘work-for-hire

agreement' which may supersede this agreement, the undersigned faculty member shall be deemed to be the sole owner of all intellectual property rights in his or her course materials, even though the faculty member is receiving a financial stipend to support the creation of online lectures, electronic presentations, podcasts, quizzes, tests, readings, simulations, including development of software, and other teaching and learning activities or material. The fact that the faculty member might use common campus resources (e.g., computers, library books, library databases, software licensed to CSULB for faculty and staff use, consultations with reference librarians, assistance from the Faculty Center for Professional Development and Instructional Technology Support Services staff) shall not alter faculty ownership of the works produced by the faculty member

Faculty handbooks or collective bargaining agreements could embody the principle at stake—rejecting any institutional claim of ownership based on the use of university resources in course development—with the following language:

The university shall make no claim of ownership or financial interest in course materials prepared under the direction of a faculty member, unless the university and faculty member have so agreed in a separate, voluntary agreement. Payment of a financial stipend, use of university resources, or release time to develop course materials shall not be construed by the university as creating a basis for a claim of institutional ownership of such materials, nor that a work for hire relationship exists between the university and the faculty member with regard to the preparation of any such materials.

A provision like this would be especially relevant to the creation of MOOCs, where the use of university resources—especially assistance from staff—tends to be greater. One might note, however, that universities do not typically ask for an actual accounting of resources used.

The *Stanford v. Roche* decision challenges a number of practices university administrators have imposed on faculty since Bayh-Dole, practices that lack standing in law and equity. Soon after the Supreme Court's ruling, IP experts predicted that US universities would respond defensively by incorporating new clauses in faculty employment contracts that assign ownership of faculty inventions to the institutions automatically.⁸ The University

of California is acting comprehensively with a different strategy: at the end of 2011 it began demanding that current faculty sign a letter assigning upfront to the university ownership to all their future inventions.⁹ Such an arrangement is called an assignment of expectant interests, or a “present assignment.” The claim made for such assignments is that they become effective the moment an invention is made, without the need for notice to the university, review of circumstances, or a determination of the university’s proper interest in the invention as provided by policy.

AAUP has received copies of letters from senior UC administrators informing UC faculty that the university will refuse to approve their grant applications if they have not signed the new patent/invention assignment form. Indeed the UC is withdrawing already submitted applications if faculty refuse to comply.

In requiring present assignment of all future patent rights from current faculty, the UC system is effectively violating the agreements faculty made when they were hired, for the UC had long followed a policy of evaluating inventions on a case-by-case basis. If that longstanding policy had contractual status, then the new requirement effectively modifies a contract without negotiation or consent. At the same time, institutions like the University of Illinois that have simply responded to *Stanford v. Roche* by posting a universal claim to institutional patent ownership on the university website are no better observers of academic freedom and faculty rights. They are imposing an objectionable condition of employment without a contract at all.

These deliberate strategies represent a disturbing, ongoing trend. Most of the developments in university research and invention policies over the past thirty years have significantly limited or even ended opportunities for faculty investigators and inventors to decide the disposition of their research results and instructional materials, whether prepared for their colleagues, for a sponsor of research, for industry, or for the classroom. Some universities, such as the University of Washington, invoke state ethics laws to exclude faculty investigators from participating in IP and invention-management transactions involving the state because, the universities argue, the faculty might receive pay and other financial benefits from such negotiations (such as summer salary, which would not otherwise be allocated) and might therefore have a personal interest in the research agreement.

Universities also now sometimes insert automatic institutional ownership clauses into standard sponsored research agreements with industry and private foundations, claiming title

and management rights to all faculty inventions created under the agreement even when the sponsor does not require such institutional interest. Faculty with little bargaining power, including PhDs in their first tenure-track jobs, are particularly vulnerable to pressure to sign away their invention rights, possibly for their entire careers.

Many current university policies distinguish between faculty IP that can be protected by copyright versus IP that is patentable, with universities commonly asserting automatic institutional ownership claims only on patentable IP. We consider this distinction to be fundamentally flawed as a method for assigning ownership rights: it is not based on any rational analysis of the nature of faculty research and productivity and it violates academic freedom. Indeed, the possibility arises that universities will expand their IP ownership claims to copyrightable faculty work as well, given that the distinction in this context is arbitrary.

Since 2007 the National Association of College and University Attorneys (NACUA) has promoted university ownership of both patentable and copyrightable IP. That year, four attorneys delivered a paper, “Creating Intellectual Property Policies and Current Issues in Administering Online Courses,” at NACUA’s annual meeting, and NACUA posted the paper on the members-only section of its website. AAUP obtained a copy in 2012 and *Inside Higher Education* convinced NACUA to make it public through *InsideHigherEd.com*.¹⁰ The authors call for comprehensive university ownership of faculty IP whenever its creation has involved substantial use of university resources. “Substantial resources,” they argue, “might include specialized computer resources or other equipment and significant use of student or research support.” A large number of income-producing activities, including textbook authorship, would readily fall under this broad definitional umbrella.

The NACUA paper also stipulates that institutions may claim a share of faculty consulting income if “the faculty member is involved with university research in the same area as the consulting” or if the consulting is in the same general area in which the faculty member teaches. Both conditions are widely applicable to faculty consulting across numerous academic disciplines. Indeed it is improbable that faculty members would be consulting in areas for which they have no demonstrated expertise as scholars and teachers. The NACUA paper further recommends that faculty members’ right to make any software they have created be freely available through open-source licensing should be subject to review to determine whether “the goals of the institution would be better served through commercialization.”

Such positions are serious challenges to academic freedom and all the more troubling from the perspective of universities' longstanding commitments to broad public dissemination of new knowledge. If a professor judges that his or her research would be more broadly utilized in continuing research or commercial applications if it were freely disseminated through "open sourcing," why should that professor be compelled to adhere to the dictates of the university's technology transfer officers who typically have far less insight into the technology in question and its possible applications? Why, furthermore, should faculty members lose the right to open source their research if the technology transfer office's preference for control—and the imposition of licensing fees—stems principally from a desire to maximize revenue for the university rather than a desire to maximize public use of the invention. Such preferences for profit-seeking undermine claims that institutional ownership is the best route to serving the public good. Such assertions in institutional policy can thus become largely aspirational.

The recommendations contained in the 2007 NACUA paper violate the fundamental principle that faculty should control their own research, and further encourage universities to assert control over all potentially profitable faculty research products, regardless of whether they are subject to copyright or are patentable. Indeed, one attitudinal survey of university technology transfer offices (TTOs), conducted by researchers Jerry Thursby, Richard Jensen, and Marie Thursby, found that most TTOs assume that comprehensive institutional ownership of faculty inventions is already the norm.¹¹ In response to the question, "Who owns inventions and materials made or developed by faculty or other personnel in your university?," all but one TTO in the sample asserted that the university owns patentable inventions and materials. For copyrightable inventions, 66 percent stated that the university was also the owner.

A compulsory ownership claim changes the relationship between faculty and administration from one of administrative governance and support to one of an employer with authority over the disposition of work of employees. However routine in companies, it is neither routine nor acceptable, for university faculty.

Interestingly, it was not always so. The history of IP management at universities makes it clear that some institutions once strongly respected faculty IP rights.¹² Whereas Stanford, MIT, and the University of Illinois sought comprehensive control over faculty IP as early as the 1930s or 1940s, the University of California's 1943 policy went a different

route: “Assignment to the Regents of whatever rights the inventor or discoverer may possess in the patent or appointment of the Board as the agent of the inventor or discoverer shall be optional on the part of the faculty member or employee.” Rutgers was even more concise in 1946: “the University claims no interest in any invention by members of its staff.” That same year the University of Cincinnati affirmed “the right of absolute ownership by a faculty member or student or other person connected with the teaching or research staff of the University of his own inventions, discoveries, writings, creations, and/or developments, whether or not made while using the regular facility of the University.” Columbia included an exception typical of a number of institutions: “While it is the policy of the Faculty of Medicine to discourage the patenting of any medical discovery or invention . . . the right of staff members in other divisions of the University to secure patents on their own inventions is well recognized.”

The policy for the University of Texas, adopted in 1945, similarly asserted that “the title to a patent for any discovery or invention made by an employee of the University of Texas belongs to the said employee and he is free to develop or handle it in any manner he sees fit.” The University of Arizona in 1939 also declared that “no inventor shall be compelled to submit an invention to the Patent Committee.” Princeton adopted its policy in 1938: “If a member of the University desires to obtain a patent on his own responsibility he may do so.” All three institutions did mandate modest profit sharing, which remains an appropriate and reasonable practice today. These university policies demonstrate that faculty research ownership and IP rights do not have to be invented; they merely need to be revived, publicized, and reinforced.

The *Stanford v. Roche* decision opens the door for faculty and their governing bodies to press for a return to the far stronger faculty inventor rights that led the development of new technology in the decades prior to the passage of the Bayh-Dole Act, and for more visionary shared governance systems around IP and invention management. The Supreme Court’s ruling strongly bolsters the AAUP position that faculty should be free to control the disposition of their scholarship without interference by university IP administrators. It logically follows from this that faculty should be free to choose how their inventions are managed, including how best to disseminate, license, or develop their discoveries, as well as which management agent is best equipped to work with them to handle the patenting and license negotiations. As a university

makes disposition of these rights a condition of employment, these rights could be secured for faculty in collective bargaining agreements.

Under such a system, professors might very well choose to grant invention rights to their own institutions. But those institutions would have to compete for faculty business on a level playing field; they could not simply claim automatic, monopoly control over faculty research. Instead, they would have to offer services consistent with faculty investigator objectives, and be held accountable for the commitments made to support licensing of the invention. The institutions would also, then, have to show how their program of invention deployment better served the public than comparable services offered by private invention management agents. Faculty could choose instead to work with an outside IP expert or management agency (unless they have previously agreed otherwise).

Faculty members' ability to retain title to their inventive scholarship not only protects academic freedom and inventors' rights, it requires universities to work much more collaboratively with faculty, both in negotiations over individual faculty inventions and in the development of shared protocols to guide invention management practices university-wide. The establishment of such shared governing protocols for the management of university IP is critically important. In a 2011 report titled "Managing University Intellectual Property in the Public Interest," the National Research Council and the National Academies made a similar recommendation, calling on faculty, administrators, and other constituencies with an interest in campus-based inventions and IP management practices to develop such protocols. The NRC explained: "It is essential that universities give a clear policy mandate to their technology transfer offices and acknowledge the tensions among frequently stated goals: knowledge dissemination, regional economic development, service to faculty, generation of revenue for the institution, and, more recently, addressing humanitarian needs."¹³

Most universities currently operate without clear shared governance protocols to guide their invention-management and technology transfer operations. The result is widespread complaints from faculty, industry, private foundations, legal experts, government agencies, and public interest groups that universities are unaccountable, overly focused on maximizing profits and ineffective in managing inventions in the public interest. In 2007, officials from the Ewing Marion Kauffman Foundation, the leading US foundation dedicated to entrepreneurship research, wrote that university-based "Technology Transfer

Offices (TTOs) were envisioned as gateways to facilitate the flow of innovation but have instead become gatekeepers that often constrain the flow of inventions and frustrate faculty, entrepreneurs, and industry.”¹⁴ Many in industry are quite vocal about poor university management of research inventions, lack of sufficient expertise in university TTOs, and the imposition of excessive licensing restrictions and fees that impede industry use.¹⁵

The AAUP agrees with the US Supreme Court that universities have a legal obligation to honor faculty inventor rights and to respect faculty’s central role in the disposition of IP deriving from their own research. The strongest opposition to this position is likely to emanate from the TTOs themselves, which have a vested interest in the status quo. In a written public comment submitted to the AAUP on July 17, 2012—after the Supreme Court’s *Stanford v. Roche* ruling—the Board of Directors of the Association of University Technology Managers (AUTM), representing TTO officers, continued to proclaim that as “employees of a university, faculty members are subject to employment contracts like any other profession” and should not be granted “free agency” when it comes to the ownership and management of their research discoveries and inventions.

According to AUTM’s letter, compulsory assignment of invention rights is justified because TTOs are best equipped to fulfill the public objectives of technology transfer, which the Association defines as: “1. to give taxpayers a return on their invested research dollars, and 2. to benefit the public by transferring new technologies for public use expeditiously and effectively.” In AUTM’s view, this is because university TTOs (also known as Technology Licensing Offices or TLOs) are the most experienced managers of these inventions, and also the least biased:

University TLOs, experienced in dealing with multiple inventors and multiple institutions, are in the best position to be neutral, objective and unbiased advocates of federally funded inventions. Further, the benefit of this expertise extends to the transfer of technologies that have other sources of funding.

AUTM provided no evidence to support its assertions, but most data on the management of campus-based research and inventions would counter the claim that TTOs are neutral and unbiased guardians of the public interest. Most universities expect their TTOs to be financially self-sustaining, which, given their operating costs, creates a strong incentive for their officers to put institutional revenue generation ahead of other competing public interest goals. The Thursby et al. survey found that university TTOs rank revenue generation (from

licensing royalties and fees) as their number one priority—not widespread use of faculty inventions or even effective commercialization.

Yet there is one general caveat that applies to all invention-management negotiations: no party to a contract is inherently immune to disabling motivations and biases. Faculty investigators and inventors, as well as administrators may be biased by the apparent opportunity for substantial wealth when negotiating IP and research contracts. The reality of such influences strengthens the argument for collectively defined university IP protocols, such as the ones we recommend. The development of such IP protocols could benefit the public by clarifying institutional support for procedures by which creative workers hosted by a university may transfer academic knowledge to society. When universities assume monopoly ownership over research inventions (and therefore need not negotiate with faculty inventors nor face competition from independent IP management agencies and professionals), it gives them a powerful incentive to pursue more restrictive and thus what they take to be potentially more profitable licensing arrangements. In actual practice, such behaviors tend to rely on a very few licensing deals generating a disproportionate amount of licensing income, while the vast majority of inventions claimed by a university languish: the extra licensing income serves to file patents—that is, to claim formal institutional ownership of inventions—but is not used to transfer these inventions to the public. In fact, the institutionally created patents become barriers to access and serve to undermine the value of the research that led to the discoveries and inventions in the first place.

In its written comments, AUTM argued that in order to foster successful technology transfer it was necessary to give universities the power to patent government-funded inventions and license them exclusively to private companies. Otherwise, it stated, those companies would be unwilling to invest the capital required to bring embryonic academic inventions into commercial development. This may be true for some inventions, but it is by no means applicable to all or even most university discoveries. As recent cases involving stem cells, breast cancer genes, disease patents, and software demonstrate, this more aggressive university focus on patents and exclusive licensing is often not in the public interest and poorly serves innovation and economic vitality.

AUTM and the university technology licensing community routinely disparage all alternatives to their adopted policy model. Viable alternatives include use of specialized invention management agents, allowing investigators and inventors to work with the IP

attorneys and management agents of their choice, using non-exclusive licensing to promote competition and free enterprise, dedication of inventions to the public domain, and use of open innovation strategies, and licensing for quality control without requiring payment. But studies show such alternative methods of technology transfer remain the most common channels by which industry gains access to academic knowledge and inventions. One survey of firms in the manufacturing sector reported that the four highest-ranked channels for accessing university knowledge were traditional, open academic channels: publications, conferences, informal information exchange, and consulting.¹⁶ Patents and licensing ranked far lower on the list. Even in pharmaceuticals, where patents and licenses are considered important to facilitate commercialization, firms still rely heavily on traditional open channels.¹⁷

The notion that stronger IP control accelerates commercialization of federally funded research runs contrary to important economic principles. When publicly-funded knowledge is “non rivalrous,” as academic science frequently is, its use in additional applications poses no real economic cost. By contrast, when any one party is denied access to a discovery, it can stifle the potential for continuing research and other commercial applications.¹⁸

Ironically, the way most academic inventions reach the attention of strategically located people in industry is through their existing contacts with faculty inventors. When Thursby et al. asked TTOs to describe the procedures used to market their scholarly work, the role of faculty inventors was paramount. Fifty-eight percent of the respondents listed faculty inventor contacts as useful for marketing academic technology to industry. “It is also likely,” noted the survey’s authors, “that some of the 75% of TTOs who listed personal contacts as important were referring to the personal contacts of faculty.” A companion Thursby et al. survey of businesses who license university technologies generated similar results: 46 percent of industry respondents said that personal contacts between their R&D staff and university faculty were extremely important in identifying new technologies to license.¹⁹ These results accord with a 1999 study finding that 56 percent of the primary leads for university license adoptions, in the 1100 licenses examined, originated from faculty.²⁰ These surveys suggest that TTOs could not operate effectively without help from faculty inventors, through their contacts in industry and their deep knowledge of invention technologies and applications. According to Thursby et al.: “[t]he importance of the faculty

in finding licensees follows, we believe, from the generally early stage of university technologies since, for such technologies, it is the faculty who are able best to articulate the value and nature of such technologies.”

It thus seems particularly short-sighted for AUTM and university administrations to insist on the compulsory assignment of faculty research inventions to the university—a process that necessarily distances faculty from the management and marketing of their own inventions. Given that faculty inventors have the deepest knowledge of their own inventions, and often are sole sources of the expertise that surrounds their scholarly work (which is often experiential and cannot be patented), it is simply sound policy for faculty to control the dissemination of their own scholarship and research.

In seeking to strengthen these rights, faculty will likely face considerable opposition from university, technology licensing officers, and their legal counsel, who have grown accustomed to asserting monopoly positions on faculty scholarship and all of whom have a powerful interest in maintaining the status quo that funds their salaries. Propelled by Bayh-Dole and other legislative reforms, universities have invested heavily in their technology ownership and licensing operations over the last three decades, expending large sums on licensing staff, legal experts, patenting and licensing fees, and IP-related litigation.

This expenditure has certainly brought some returns for a handful of institutions, but it has also generated everywhere substantial infrastructure overhead and expense. From 1983 to 2003, the number of patents issued directly to American universities grew from 434 to 3,259.²¹ The overwhelming majority of these patents were concentrated in biomedicine, but patents also came from engineering, computer science, agriculture, and numerous other fields. Universities, however, refuse to disclose how many of these patents have not been licensed, and of those that have been licensed, which of these licenses have resulted in new products made available to the public at a reasonable cost. Total annual revenues from the licensing of university inventions increased from roughly \$200 million in 1991 to \$1.85 billion in 2006.²² In 2007, AUTM reported a total of 3,148 cumulative, operational startup firms associated with US university patenting and licensing activities. But it does not report how many of these firms are still in business or which of them has ever produced a new product offered for sale.²³

The figures are intended to look impressive. But they are not. **Contrary to widespread assumptions, most universities have not actually generated substantial**

income from their patenting and licensing activities, nor has their licensing activity resulted in a significant number of new products coming into commercial use. Only roughly two dozen US universities with “blockbuster” inventions generate sizable revenue from their licensing activities.²⁴ A 2006 econometric analysis found that, after subtracting the costs of patent management, universities netted “on average, quite modest” revenues from 1998 until 2002, two decades after Bayh-Dole took effect. This study concluded: “universities should form a more realistic perspective of the possible economic returns from patenting and licensing activities.”²⁵ Lita Nelsen, director of the technology licensing office at MIT, made similar observations: “the direct economic impact of technology licensing on the universities themselves has been relatively small (a surprise to many who believed that royalties could compensate for declining federal support of research) . . . [M]ost university licensing offices barely break even.”²⁶ Difficulty breaking even is especially true for licensing offices less than twenty years old and for institutions with annual research budgets of less than \$100 million. Especially those universities with research budgets under \$100m should, for financial reasons as well as those of academic freedom and support for innovation, adopt policies that restore faculty control of their inventive scholarship. The “big hit” invention that a member of their faculty might make is more likely to benefit the institution through a voluntary collaboration than through a compulsory ownership policy that demands to manage all inventions for fear of losing out on one lucrative invention every two or three decades.

Supporters of Bayh-Dole may have hoped the legislation would create opportunities for universities to manage academic inventions made with federal support and thus speed the pace of technological innovation in the United States. But here too the legislation’s economic legacy has been mixed. Though university patents soared after Bayh-Dole, studies find that academic patenting does not correlate well with increased industrial use or commercial development of academic discoveries.²⁷ A 2002 study of the patent portfolios of Stanford and Columbia found that, of eleven major inventions, seven would have been commercialized without any assertion of patent rights or TTO licensing, because “strategically located people in industry were well aware of the university research projects even before the universities’ [TTOs] began to market the inventions.”

IV. AAUP POLICY STATEMENTS ON COPYRIGHT AND PATENT RIGHTS

The academic freedom principles undergirding Principle 11 (below) have been guiding the AAUP since its founding. To the AAUP's knowledge, this Principle has not been endorsed previously by other professional academic groups; however it builds upon several recent policy statements issued by the AAUP relating to faculty generated IP. It is also consistent with long-standing principles of academic freedom, and with US patent and copyright laws pertaining to the ownership rights of inventors.

As the AAUP's 1999 "Statement on Copyright" observed regarding faculty research and inventions subject to copyright: "the faculty member rather than the institution determines the subject matter, the intellectual approach and direction, and the conclusions"; for the institution to control the "dissemination of the work" would be "deeply inconsistent with fundamental principles of academic freedom." The statement goes on to note: "it has been the prevailing academic practice to treat the faculty member as the copyright owner of works that are created independently and at the faculty member's own initiative for traditional academic purposes." And it adds, "it is unlikely that the institution will be regarded as having contributed the kind of 'authorship' that is necessary for a 'joint work' that automatically entitles it to a share in the copyright ownership."

In 1998, the AAUP established a Special Committee on Distance Education and Intellectual Property Issues, which released several documents the following year, including one recommending language for campus policies regarding IP rights and management titled "Sample Intellectual Property Policy & Contract Language." This document begins: "the copyright statement takes as its guiding assumption that the faculty member (or members) who create the intellectual property own the intellectual property," adding that "that assumption applies to the patent area as well." It went on to recommend the following language for campus adoption: "Intellectual property created, made, or originated by a faculty member shall be the sole and exclusive property of the faculty, author, or inventor, except as he or she may voluntarily choose to transfer such property, in full or in part." Drawing on a detailed discussion of "work made for hire" in the "Statement on Copyright," the Special Committee endorsed the following: "A work should not be treated as 'made for hire' merely because it is created with the use of university resources, facilities, or materials of the sort traditionally and commonly made available to faculty members." It went on to note: "Funds received by the faculty member from the sale of intellectual property owned by the faculty author or inventor shall be allocated and expended as determined solely by the faculty author or inventor." Recognizing the current trend for universities to assign IP rights to institutions involuntarily, the AAUP "Statement on Copyright" further warns: "If the faculty member is indeed the initial owner of copyright, then a unilateral institutional declaration cannot effect a transfer, nor is it likely that a valid transfer can be effected by the issuance of appointment letters to new faculty members requiring, as a condition of employment, that they abide by a

faculty handbook that purports to vest in the institution the ownership of all works created by the faculty member for an indefinite future.”

The AAUP’s “Statement on Distance Education and Intellectual Property” is prefaced by a warning that the “vital intersection of emergent technologies and the traditional interests of faculty members in their own intellectual products requires scrutiny and the formulation of policies that address the former while preserving the latter.” The statement itself emphasizes that “the faculty should have primary responsibility for determining the policies and practices of the institution in regard to distance education.” That includes authority for determining whether particular courses should receive credit at a college and how much credit they should receive. The statement does not anticipate the phenomenon of a MOOC enrolling 100,000 students, but it takes a firm stand on principles that should govern online courses no matter what their size: “Provision should also be made for the original teacher-creator, the teacher-adapted, or an appropriate faculty bod to exercise control over the future use and distribution of recorded instructional material and to determine whether the material should be revised or withdrawn from use.”

Even when a faculty member willingly takes on a distance education course on a work-for-hire basis, the statement clarifies a key condition: “the faculty member should, at a minimum, retain the right to take credit for creative contributions, to reproduce the work for his or her instructional purposes, and to incorporate the work in future scholarly works authored by the faculty member.”

Principle 11 was additionally informed by recent evidence of university technology transfer offices abrogating the academic freedom rights of faculty related to IP decisions pertaining to their research (some of these cases are discussed above or in Recommended Principles to Guide Academy-Industry Relations), and also by a 2010 faculty Advisory Board ruling in an academic freedom case involving a dispute between Stanford University and a Stanford professor (also discussed in Recommended Principles).

Principle 12 (below) grows directly out of earlier AAUP policy statements on IP-related issues discussed under Principle 11 immediately above here. The AAUP has already recommended that a campus IP committee “play a role in policy development.” The AAUP’s 2004 “Statement on Corporate Funding of Academic Research” further observes: “Consistent with principles of sound academic governance, the faculty should have a major role not only in formulating the institution’s policy with respect to research undertaken in collaboration with industry, but also in developing the institution’s plan for assessing the effectiveness of the policy.” The AAUP has long asserted the faculty’s primary responsibility for the “subject matter and methods” of research, a principle reaffirmed in the 1966 “Statement on Government of Colleges and Universities.”

With regard to Principle 13, one should note that the AAUP’s “Statement on Graduate Students” points out that “graduate students are entitled to the protection of their intellectual property rights.” More broadly, The AAUP’s 1999 “Sample Intellectual Property Policy & Contract Language” takes a parallel approach to the one offered here: “In light of the changing legislative environment, and in view of the evolution of contracts and policies in the intellectual property area AAUP believes that the establishment of an on-going Intellectual Property Committee representing both faculty and administration would serve a useful purpose in both collective bargaining and non-collective bargaining environments. Such a committee could serve a variety of purposes, including keeping faculty and administration apprised of technological changes that will affect the legislative, contract, and policy contexts. Such a committee would play a role in policy development, as well as perform a dispute resolution function. In the absence of such an overall policy committee, a dispute resolution committee with both administrative and faculty representation is essential.”

Principle 14 flows logically from the recommendations contained in Principle 11, which were drawn from earlier AAUP statements relating to faculty rights to own and control their own intellectual property. The purpose of Principle 14 is to extend these faculty rights to both traditional and larger scale corporate sponsored research agreements.

Please see Recommended Principles to Guide Academy-Industry Relations for detailed citation of consensus statements by other academic and professional groups that support Principles 15-21.

Finally, the statement on “Academic Freedom and Electronic Communications” reminds us that “teachers are entitled to freedom in the classroom in discussing their subject” and adds that “the concept of ‘classroom’ must . . . indeed encompass all sites where learning occurs—Web sites, home pages, bulletin boards, listserves, etc.”

V. INTELLECTUAL PROPERTY PRINCIPLES DESIGNED FOR INCORPORATION INTO FACULTY HANDBOOKS AND COLLECTIVE BARGAINING AGREEMENTS

NOTE: These principles are reproduced from Recommended Principles to Guide Academy-Industry Relations, a major AAUP report to be published in book form in early 2014 by the AAUP Foundation. We have retained the numbering used in the book. The book includes 56 principles.

HANDBOOK PRINCIPLE 11: Faculty Inventor Rights and IP Management: Faculty members’ fundamental rights to direct and control their own research do not terminate when they make a new invention or other research discovery; these rights extend to decisions involving invention management, IP licensing, commercialization, dissemination,

and public use. Faculty assignment of an invention to a management agent, including the university that hosted the underlying research, will be voluntary and negotiated, rather than mandatory, unless federal statutes or previous sponsored research agreements dictate otherwise. Faculty inventors retain a vital interest in the disposition of their research inventions and discoveries and will, therefore, retain rights to negotiate the terms of their disposition. Neither the university nor its management agents will undertake IP decisions or legal actions directly or indirectly affecting a faculty member's research, inventions, instruction, or public service without the faculty member's and the inventor's express consent. Of course faculty members, like other campus researchers, may voluntarily undertake specific projects as "work for hire" contracts. When such work for hire agreements are truly voluntary and uncoerced, their contracted terms may legitimately narrow faculty IP rights.

PRINCIPLE 12: Shared Governance and the Management of University Inventions: The faculty senate or an equivalent body will play a primary role in defining the policies and public-interest commitments that will guide university-wide management of inventions and other knowledge assets stemming from campus-based research. University protocols that set the norms, standards, and expectations under which faculty discoveries and inventions will be controlled, distributed, licensed, and commercialized are subject to approval by the faculty senate or an equivalent governance body, as are the policies and public-interest commitments that will guide university-wide management of inventions and other knowledge assets stemming from campus-based research. A standing faculty committee will regularly review the university's invention management practices, ensure compliance with these principles, represent the interests of faculty investigators and inventors to the campus, and make recommendations for reform when necessary.

HANDBOOK PRINCIPLE 13: Adjudicating Disputes Involving Inventor Rights: Just as the right to control research and instruction is integral to academic freedom, so too are faculty members' rights to control the disposition of their research inventions. Inventions made in the context of university work are the results of scholarship. Invention management agents are directed to represent and protect the expressed interests of faculty inventors, along with the interests of the institution and the broader public to the maximum extent possible. Where the interests diverge insurmountably, the faculty senate or an equivalent body will adjudicate the dispute with the aim of recommending a course of action to promote the greatest benefit for the research in question, the broader academic community, and the public good. Student and other academic professional inventors have access to grievance procedures if they believe their inventor or other IP rights have been violated. Students will not be urged or required to surrender their IP rights to the university as a condition of participating in a degree program.

HANDBOOK PRINCIPLE 14: IP Management and Sponsored Research Agreements: In negotiating outside sponsored-research agreements, university administrators will make every effort to inform potentially affected faculty researchers and to involve them meaningfully in early-stage negotiations concerning invention management and IP. In the case of large-scale corporate sponsored research agreements like Strategic Corporate Alliances (SCAs), which can have an impact on large numbers of faculty members, not all of whom may be identifiable in advance, a special faculty committee will be convened to participate in early-stage negotiations, represent collective faculty interests, and ensure compliance with relevant

university protocols. Faculty participation in all institutionally negotiated sponsored-research agreements will always be voluntary.

HANDBOOK PRINCIPLE 15: Humanitarian Licensing, Access to Medicines: When lifesaving drugs and other critical public-health technologies are developed in academic laboratories with public funding support, the university will make a strong effort to license such inventions in a manner that will ensure broad public access in both the developing and the industrialized world. When issuing an exclusive license to a company for the development of a promising new drug—or any other critical agricultural, health, or environmental safety invention—the university will always seek to include provisions to facilitate distribution of these inventions in developing countries at affordable prices.

HANDBOOK PRINCIPLE 16: Securing Broad Research Use and Distribution Rights: All contracts and agreements relating to university-generated inventions will include an express reservation of rights—often known as a “research exemption”—to allow for academic, nonprofit, and governmental use of academic inventions and associated intellectual property for non-commercial research purposes. Research exemptions will be reserved and well publicized prior to assignment or licensing so that faculty members and other academic researchers can share protected inventions and research results (including related data, reagents, and research tools) with colleagues located at this university or at any other nonprofit or governmental institution. The freedom to share and practice academic discoveries, for educational and research purposes, whether legally protected or not, is vitally important for the advancement of research and scientific inquiry. It also enables investigators to replicate and verify published results, a practice essential to scientific integrity.

HANDBOOK PRINCIPLE 17: Exclusive and Nonexclusive Licensing: The university, its contracted management agents, and faculty will always work to avoid exclusive licensing of patentable inventions, unless such licenses are absolutely necessary to foster follow-on use or to develop an invention that would otherwise languish. Exclusive and other restrictive licensing arrangements will be used sparingly, rather than as a presumptive default. When exclusive licenses are granted, they will have limited terms (preferably less than eight years), include requirements that the inventions be developed, and prohibit “assert licensing,” sometimes referred to as “trolling” (aggressively enforcing patents against an alleged infringer, often with no intention of manufacturing or marketing the product yourself). Exclusive licenses made with the intention of permitting broad access through reasonable and nondiscriminatory sublicensing, cross-licensing, and dedication of patents to an open standard should meet public-access expectations. However, the preferred methods for disseminating university research are nonexclusive licensing and open dissemination, to protect the university’s public interest mission, open-research culture, and commitment to advancing research and inquiry through broad knowledge sharing. To enhance compliance and public accountability, the university requires all invention-management agents to report publicly and promptly any exclusive licenses issued together with written statements detailing why an exclusive license was necessary and why a nonexclusive one would not suffice. The faculty senate, or other designated governance body, has the authority to review periodically any exclusive licenses and corresponding statements for consistency with the principle.

HANDBOOK PRINCIPLE 18: Upfront Exclusive Licensing Rights for Research Sponsors:

The university will refrain from signing sponsored-research agreements, especially multi-year, large-scale SCA agreements, granting sponsors broad title, or exclusive commercial rights, to future sponsored research inventions and discoveries unless such arrangements are narrowly defined and agreed to by all faculty members participating in, or foreseeably affected by, the alliance. If this arrangement is not feasible, as in the case of larger SCAs, the faculty senate (or another designated governance body) will review and approve the agreement and confirm its consistency with principles of academic freedom and faculty independence and with the university's public-interest missions. Special consideration will be given to the impact exclusive licenses could have on future, as-yet-unimagined uses of technologies. When granted, exclusive rights will be defined as narrowly as possible and restricted to targeted fields of use only, and every effort will be made to safeguard against abuse of the exclusive position.

HANDBOOK PRINCIPLE 19: Research Tools and Upstream Platform Research: The university and its contracted management agents will undertake every effort to make available and broadly disseminate research tools and other upstream platform inventions in which they have acquired an ownership interest. They will avoid assessing fees, beyond those necessary to cover the costs of maintaining the tools and disseminating them, and avoid imposing other constraints that could hamper downstream research and development. No sponsored-research agreement will include any contractual obligations that prevent outside investigators from accessing data, tools, inventions, and reports relating to scholarly review of published research, matters of public health and safety, environmental safety, and urgent public-policy decisions.

HANDBOOK PRINCIPLE 20: Diverse Licensing Models for Diverse University Inventions: Faculty investigators/inventors and their management agents will work cooperatively to identify effective licensing or distribution models for each invention with the goal of enhancing public availability and use.

HANDBOOK PRINCIPLE 21: Rights to "Background Intellectual Property" (BIP): University administrators and their agents will not act unilaterally when granting sponsors rights to university-managed background intellectual property (BIP) related to a sponsor's proposed research area but developed without the sponsor's funding support. The university will be mindful of how BIP rights will affect faculty inventors and other investigators who are not party to the sponsored-research agreement. University administrators and managers will not obligate the BIP of one set of investigators to another's sponsored-research project, unless that BIP is already being made available under nonexclusive licensing terms, or the affected faculty inventors and investigators have consented.

VI. Endnotes

¹ Trade secrets, which are information with economic value not generally known to the public and subject to reasonable controls on disclosure, are sometimes, but not always, included in discussions of intellectual property.

² Mark A. Lemley, "Are Universities Patent Trolls?," *Fordham Intellectual Property, Media & Entertainment Law Journal* 18, no. 3 (2008).

³ Siddhartha Mukherjee, *The Emperor of All Maladies: A Biography of Cancer* (New York: Scribner, 2010), 434.

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- ⁴ The complete US Supreme Court decision in *Board of Trustees of Leland Stanford Junior University v. Roche Molecular Systems* (2011) is available at <http://www.supremecourt.gov/opinions/10pdf/09-1159.pdf>.
- ⁵ Baer, Maddy F., Stephanie Lollo Donahue and Rebecca J. Cantor, "Stanford v. Roche: Confirming The Basic Patent Law Principle That Inventors Ultimately Have Rights In Their Inventions," *les Nouvelles* (March 2012): 12–23, available at <http://www.lesi.org/les-nouvelles/les-nouvelles-online/march-2012/2012/02/29/stanford-v-roche-confirming-the-basic-patent-law-principle-that-inventors-ultimately-have-rights-in-their-inventions>.
- ⁶ Lapin, Lisa, "Stanford 'Disappointed' In Supreme Court Ruling In Roche Case," Stanford University News Press Release, June 7, 2011, available at: <http://news.stanford.edu/news/2011/june/court-roche-ruling-060711.html>.
- ⁷ Wescott, Kathi, "Faculty Ownership of Research Affirmed," *Academe*, 97, no. 5 (2011), available at <http://www.aaup.org/AAUP/pubsres/academe/2011/SO/nb/patentlaw.htm>.
- ⁸ See Jones, Matt, "Supreme Court Rules for Roche, Clarifies Bayh-Dole," *GenomeWeb Daily News* (June 6, 2011): "The most likely effect of the ruling will be that universities will begin making sure that their employees sign assignment agreements that make it clear if they expect to own the rights to the patents their employees generate, Steve Chang, an attorney with the IP firm Banner and Witcoff, told *GenomeWeb Daily News* Monday." For an example of a comprehensive claim of IP ownership by a university see the University of Washington's "Patent and Invention Policy" at www.washington.edu/admin/rules/policies/PO/E36.html
- ⁹ The University of California's letter of assignment that all faculty are required to sign reads, in part, in "consideration of my employment, and of wages and/or salary to be paid to me during any period of my employment, by University, and/or my utilization of University research facilities and/or my receipt of gift, grant, or contract research funds through the University . . . I acknowledge my obligation to assign, and do hereby assign, inventions and patents that I conceive or develop 1) within the course and scope of my University employment while employed by the University, 2) during the course of my utilization of any University research facilities, or 3) through any connection with my use of gift, grant, or contract research funds received through the University." The full policy is available at www.ucop.edu/ucophome/policies/bfb/upay585.pdf
- ¹⁰ Cate, Beth, David Drooz, Pierre Hohenberg, and Kathy Schulz, "Creating Intellectual Property Policies and Current Issues in Administering Online Courses," a paper presented at The National Association of College and University Attorneys (NACUA), San Diego, CA, November 7–9, 2007. See also: Nelson, Cary, "Whose Intellectual Property?," Opinion Editorial, *Inside Higher Ed.com*, June 21, 2012, available at <http://www.insidehighered.com/views/2012/06/21/essay-faculty-members-and-intellectual-property-rights> Because the Cate et al. paper is posted on its members-only website, NACUA permitted *Inside Higher Ed.com* to post a link on its own website, noting that while the paper reflected the authors' views at the time, some issues and some of their thinking may have changed since then: <http://www.insidehighered.com/views/2012/06/21/essay-faculty-members-and-intellectual-property-rights>
- ¹¹ Thursby, Jerry G., Richard Jensen, Marie C. Thursby, "Objectives, Characteristics and Outcomes of University Licensing: A Survey of Major US Universities," *The Journal of Technology Transfer*, 26, no. 1/2 (2001), 59–72.
- ¹² Palmer, Archie M., *Survey of University Patent Policies: Preliminary Report* (Washington, DC: National Research Council, 1948), Appendix, with reprints of 37 university patent policies. The policies for the Universities of Arizona, California, Cincinnati, Rutgers, and Texas appear, respectively, on pages 122, 126–27, 130, 157, and 162. Columbia is on page 132 and Princeton is on page 155. Also see Archie M. Palmer, *University Research and Patent Policies, Practices, and Procedures* (Washington, D.C.: National Academy of Science-National Research Council, 1962) for a more extensive list of patent policies.
- ¹³ National Research Council, *Managing University Intellectual Property in the Public Interest*, (Washington, DC: The National Academies Press, 2010), available at http://www.nap.edu/catalog.php?record_id=13001. See Recommendations 1 and 2, quoted on p. 4 and p. 66.
- ¹⁴ Litan, Robert E., Lesa Mitchell, E.J. Reedy, "Commercializing University Innovations: A Better Way," working paper 449, Regulation2point0, available at http://regulation2point0.org/wp-content/uploads/downloads/2010/04/RP07-16_topost.pdf.
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- ¹⁷ Alfonso Gambardella, *Science and Innovation* (Cambridge: Cambridge University Press, 1995).
- ¹⁸ Kenneth J. Arrow, "Economic Welfare and the Allocation of Resources for Invention," in *Science Bought and Sold: Essays in the Economics of Science*, ed. Philip Mirowski and Esther-Mirjam Sent (1962; reprint, Chicago: University of Chicago Press, 2002), 165–81; Richard R. Nelson, "The Simple Economics of Basic Research," in

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²² All original statistics on university and hospital patenting and licensing come from Licensing Activity Surveys coordinated by the Association of University Technology Managers (AUTM). However these figures were extracted from: Cohen and Walsh, "Real Impediments to Academic Biomedical Research" Op Cit. Note 89; and also from Anthony D. So, Bhaven N. Sampat, Arti K. Rai, Robert Cook-Deegan, Jerome H. Reichman, Robert Weissman and Amy Kapczynski, "Is Bayh-Dole Good for Developing Countries? Lessons from the US Experience," *PLoS Biology*, 6, no. 10 (2008): e262, available at <http://www.plosbiology.org/article/info:doi/10.1371/journal.pbio.0060262>.

²³ AUTM, *FY 2007 Licensing Activity Survey Full Report*, ed. Robert Tieckelmann, Richard Kordal, Sean Flanigan, Tanya Glavicic-Théberge, and Dana Bostrom (2007).

²⁴ So et al., "Is Bayh-Dole Good for Developing Countries?" Original sources: AUTM, *FY2006 US Licensing Activity Survey* (2006); David C. Mowery, Richard R. Nelson, Bhaven N. Sampat, and Arvids A. Ziedonis, "The growth of patenting and licensing by US universities: An assessment of the effects of the Bayh-Dole Act of 1980," *Research Policy*, 30, no. 1(2001): 99–119.

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²⁶ Lita Nelsen, "The Rise of Intellectual Property Protection in the American University," *Science* 279, no. 5356 (1998): 1460–61.

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