Benchmarking Report on IP Policies

PREPARED FOR THE
IDAHO STATE BOARD OF EDUCATION

Prepared by:

Battelle Memorial Institute

Technology Partnership Practice

January 2002

Battelle
. . . Putting Technology To Work

DISCLOSURE/DISCLAIMER

In the interest of preparing a report that is useful and informative to lay constituencies of the Idaho State Board of Education, Battelle has paraphrased, synopsized or summarized a variety of highly complex laws, regulations and policies at the federal, state and university system levels (no case law was reviewed). It is virtually certain that some formal accuracy is lost by placing many such laws and policies in a common framework for comparison and analysis. In addition, Battelle wishes to underline that this report does not constitute legal advice. The author is not an attorney and his work has not been reviewed by any attorneys. Rather, this report should be viewed and used as a commentary on strategy and management practice.

Executive Summary

BACKGROUND AND RATIONALE

The Idaho State Board of Education is in the process of modernizing and reconfiguring its policies on intellectual property (IP) management at the institutions under its governance. Because this initiative has uncovered lack of consensus as to what state policy should encompass, and even what is conventionally done in other, similar settings, the Board asked Battelle Memorial Institute to conduct this benchmark exercise. The goal of the project was to build trust among the Board's constituencies by establishing a common base of knowledge on current practices and trends in IP management in academic settings judged of some relevance to the situation in Idaho.

As in any benchmarking, the purpose was to identify, analyze and draw useful lessons from the practices of institutions that are generally comparable along relevant strategic dimensions. The issues of specific interest were: (1) the substantive content of IP policies at public universities generally comparable with Idaho's; and (2) the interrelationship between policies and procedures specified by a board or agency at the state level and those delegated to individual universities or campuses. After extensive discussion with the Board's staff (which in turn consulted the Board's constituencies), a set of 10 benchmark "pairs" was selected – each comprising a state and a particular campus.[1]

The resulting set includes six states with university governance structures quite similar to Idaho's, each with an institution generally comparable to either University of Idaho or Idaho State University. The set also includes four states with university governance structures not like Idaho's, but with campuses thought to be relevant for some other reason, such as historic partnership with Idaho institutions, commonality of regional interest, or interaction with the microelectronics sector that is of particular interest at Boise State University. Taken together, the benchmark set offers a range of average, above-average, and below-average performance on commonly accepted measures of the vigor of a university-based IP management program. It is not specifically constructed as a best-practice set.

Battelle conducted the benchmark survey through extensive web-based research and direct interviews, where possible, with (1) a staff officer of the central governing board charged with oversight and management of IP policies at the system level; and (2) a vice president for research at a public university governed by that system, or a designee, such as a director of technology transfer, licensing, or commercialization.

---

[1] The pairs were: California/UCSD; Iowa/Iowa State University; Kansas/Wichita State University; Montana/Montana State University-Bozeman; Nevada/University of Nevada Reno; Oregon/Portland State University; Texas/UT Austin; Utah/Utah State University; Washington/Washington State University; and Wyoming/University of Wyoming.

PRINCIPAL FINDINGS

Division of policy responsibility

Benchmark practice. The benchmark set exhibited the full range of options for allocation of policy responsibility between central and campus-based entities. At one extreme was Oregon, which has a uniquely hierarchical structure: IP policy is stated at increasing specificity in state law, in administrative regulation of the state-level governing board, and in policy manuals of the board – leaving only minor procedural issues to the constituent campuses. At the other extreme was Utah, which maintains no directly pertinent policy at the state level, and grants full autonomy on IP issues to the two major public universities governed by its Board of Regents.

Best practice. No particular model for dividing policy responsibility commends itself as a best practice. However, Battelle observes that multilevel elaboration of IP policy such as is found in Oregon may allow various internal or external parties at interest to play one statement off against another. This danger can be mitigated by restricting state-level policy to an "outline," as is done in Kansas. This approach allows a state-level governing board to articulate its requirements, intentions, and expectations at the highest level of generality while maintaining flexibility that may be required by constituent institutions of varying size, complexity and academic culture.

Division of operating responsibility

Benchmark practice. Involvement of the state-level agency in day-to-day management of IP affairs generally tracks the division of policy responsibility. State involvement is strongest in Nevada, Oregon and Texas, where state- or system-level general counsel play a significant role in approving or reviewing contracts associated with IP management. At the campus level, virtually all IP management offices are functions of the Vice President or Vice Provost for Research. Three IP-management offices – those at Iowa State, Montana State, and Washington State – are also affiliated with a research foundation that acts as the university's patent and licensing agent.

Best practice. The IP offices at Cal/UCSD and UT-Austin generate revenues in excess of expenses, but the rest are struggling to raise licensing revenues to the level of budgeted costs of the IP management unit. There is a strong school of thought even among the most successful institutions that IP management offices cannot succeed in their mission if faculty regard them as concerned only with maximizing license revenue. In this view, best practice requires IP offices to take on many "service functions" that are not necessarily cost-effective, such as negotiation of materials-transfer agreements and "speculative" patenting expenses for inventions without an industry licensee in view.

Scope of IP ownership claims

Benchmark practice. In virtually every case, ownership is asserted very broadly to "any invention" made using university funds or resources (including sponsored projects). Policy on copyright ownership is somewhat less sweeping and also less settled. In most cases, ownership is asserted only to copyrightable work either created in the scope of of-

ficial duties or using "significant" university resources. Five of the policies make explicit mention of courseware as a separate category of copyrightable expression. Of these, two (Iowa State and Wichita State) claim ownership of courseware only when it is university sponsored. Three others (Montana State, Portland State, and University Wyoming) make broad claims to effectively all courseware. The obligation to disclose IP is entirely uniform. Most benchmarks nominally require disclosure of all software, but recognize there is unlikely to be full compliance.

Best practice. On inventions, practice is so uniform that there is little room to identify best practices. On copyrights, especially for courseware, it is unclear that any of the benchmarks (or any other American institution) has fully settled the complex issues involved. Copyright policies that assert broad interest in courseware while maintaining a willingness to compensate for its use off-campus are probably state of the art. On software that is not obviously patentable, best practice is to ask faculty to place an institutional copyright notice on all such code and then pursue further protection only if and when commercial interest is expressed.

Royalty distribution

Benchmark practice. There is wide variation in royalty distribution policy among the benchmarks. All subtract patent expenses from gross income, and three charge an administrative fee on the balance before further distribution (although in no case did that fee cover actual costs). The inventor's share of net royalties varied widely, sometimes fixed (rates ranged from 33 percent to 60 percent) and sometimes along a sliding scale keyed to royalties received (from a maximum of 100 percent for the first few dollars recovered to a minimum of 25 percent for large royalty flows). More than half the benchmarks return some portion of the remaining balance to the inventor's college and/or department.

Best practice. In the benchmark set as in other American institutions, a high inventor's share of licensing royalties (above, say 40 percent) is not correlated with strong performance on standard IP-management measures. While high shares may be desirable incentives for faculty cooperation, particularly in institutions without high-profile role models, it is equally important to reserve a percentage for payment to colleges and departments whose "buy-in" is essential. Overall, best practice emphasizes cultivating a supportive faculty and administrative culture rather than simply setting a high inventor's share.

Treatment of equity

Benchmark practice. Only three institutions in the set unambiguously have authority to hold equity in spin-off companies (in lieu of certain cash fees or royalties), either directly or through an affiliated foundation. Counting also those that may soon receive or attempt to exercise such authority, there is about an even division between those that distribute an inventor's share of equity directly and those that manage it centrally, with distribution to the inventor only upon a "liquidity event" such as a public offering of stock.

Best practice. The institutional ability to hold equity is a best practice, although how the inventor's share should be managed is far from settled. Centralized management makes it

easier to comply with the letter of federal conflict-of-interest rules but does not entirely eliminate the potential for conflict. Central management also poses a challenge to avoid illegal use of "insider" information.

Industrial research

Benchmark practice. All the benchmarks welcome industrially sponsored research, and all will accommodate corporate requirements to treat pre-existing IP confidentially. No university in the benchmark set assigns IP outright to industrial sponsors, but all will license it exclusively. All will allow a short period for review of publications for confidential material or for new inventions that should be disclosed, assessed and if necessary protected by patent application. None will permit indefinite delay or suppression of publication. In most cases, the IP office consults with the sponsored-research office on IP-related terms of industry-sponsored research agreements.

Best practice. Best practice in management of industry-sponsored academic research is widely studied and well disseminated by organizations like the Business-Higher Education Forum. In general, best practice is for both corporate sponsors and universities to understand the differences between their respective sectors, and to strive for clarity in expressing their expectations of each other.

Consulting/conflict issues

Benchmark practice. Most universities in the set encourage consulting for industry as one way for faculty to develop their professional skills, and most have specific guidelines on the number of days that faculty may consult while still being paid by the university. Most require some degree of before- or after-the-fact disclosure, or both.

Best practice. Faculty consulting is standard academic practice, in both private and public universities. Moreover, some of the strongest supporters of faculty consulting are regional industry groups, which use faculty to remain current on the latest science and engineering research affecting their technology sectors. A best-practice is to recognize the connection between faculty consulting and the economic-development mission of the public university.

Spin-out/conflict issues

Benchmark practice. Establishment of federal guidelines for disclosing and managing potential conflicts of interest has greatly reduced the inter-campus variability in institutional policy. Since 1995 each university receiving federal funds has had to maintain an infrastructure (forms, procedures, etc.) for disclosure and one or more committees for review and management of potential conflict. The benchmark institutions are no exceptions.

Best practice. Conflict management is critically important as it pertains to the various roles played by faculty members whose IP results in formation of a spin-out company in which the university (and he or she) may hold equity shares. Best practice resides not in the disclosure procedure itself, but in the cultural expectation and attitudes that accom-

pany the program of conflict management. Procedures that flatly forbid certain activities and try to "force conflict underground" are doomed to failure. Policies work best when they acknowledge, as Utah State does, that potential conflict is not bad in and of itself, but only if it is not acknowledged and managed in an open and accountable way. Best practice promotes entrepreneurial conduct by faculty so long as it does not interfere with the educational or research mission of the university.

Concluding observations

- Existing IP policy and procedure at Idaho's research institutions seem generally consistent with mainstream academic practice in the benchmark set. This is so both for aspects of IP policy where there is wide variation among particular settings, and those where practice is fairly uniform across the nation. No single academic institution in the set stands out as a specific model to emulate, although elements of accepted best practice can be found in several of the benchmarks surveyed.
- Existing policies at UI, ISU and BSU ought not prevent them from attracting highly qualified faculty who are *also* inclined to collaborate with regional industry sponsors and to assist in the creation of Idaho-based start-up companies. The Idaho institutions seem eager to continue the refinement of their policies and the education of their faculty in how to balance various complex obligations. The institutions are anxiously awaiting completion of an updated umbrella policy by the State Board of Education, so they may continue to develop their respective campus-level approaches.
- Revision of policy gives the Board an opportunity, above all, to clearly articulate the outcomes it desires. Experience from the benchmark set clearly shows that a top-level "cultural" commitment to entrepreneurial management of university-owned IP can often be more important to success than the specific provisions of IP policy. The Board has an opportunity to give its institutions the confidence they need to set a tone on campus that allows each institution to play its role in contributing to Idaho's economic growth.

Introduction

Scope and Purpose

The Idaho State Board of Education is in the process of modernizing and reconfiguring its policies on intellectual property (IP) management[2] at the institutions under its governance. Because this initiative has uncovered lack of consensus as to what state policy should encompass, and even what is conventionally done in other, similar settings, the Board asked Battelle to conduct this benchmark exercise. The goal of this project was to build trust among the Board's constituencies by establishing a common base of knowledge on current practices and trends in IP management in academic settings judged of some relevance to the situation in Idaho.

Selection of Benchmarks

The purpose of any benchmarking exercise is to identify, analyze, and draw useful lessons from the practices of institutions that are generally comparable along relevant strategic dimensions. In the present case, the Idaho State Board of Education has expressed interest in:

- The substantive content of IP policies at public institutions of higher education in the United States that are generally comparable with the University of Idaho (UI), Idaho State University (ISU), and if applicable to Boise State University (BSU) and/or Lewis and Clark State College; and
- The interrelationship between IP policies and practices that are specified or imposed by a board or agency at the state-government level, and those that are delegated to individual universities or university campuses.

To gather information on these issues, Battelle conducted a series of semi-structured telephone interviews with executives at both the system and university levels of benchmark states. To identify those states that were most appropriate to Idaho's present interests, Battelle turned to two authoritative classifications of American institutions of higher education:

- The *Structures Sourcebook* of the Education Commission of the States,[3] which categorizes state systems of higher education according to governance structure; and

---

[2] Sometimes the management function is also called technology transfer, tech transfer, or simply patents and licensing or some similar name.

[3] The Education Commission of the States. *State Postsecondary Education Structures Sourcebook: State Coordinating and Governing Boards: 1997.* Denver: The Education Commission of the States, 1997. Available by order from the Commission, at http://www.ecs.org. A revised edition covering recent changes in structure is under preparation but is not expected to be available until 2002.

- The *Millennial Classification* of the Carnegie Foundation,[4] which classifies individual universities according to the extent of their research and graduate programs.

The *Structures Sourcebook* categorizes state systems of higher education primarily according to whether their governance is by:

- A consolidated governing board, with complete fiduciary responsibility for all public institutions (sometimes divided between four- and two-year systems);
- A regulatory board with program-approval authority (and varying budget authority) over individual universities or systems of universities that are governed by their own fiduciary boards;
- An advisory board with somewhat weaker "review and recommend" program authority (and varying budget authority); or
- A planning or service agency with no program or budgetary role whatever.

The State of Idaho falls clearly in the first category,[5] and in the subset where a single board directly governs not only four-year but also two-year public institutions of higher education. For the purposes of the present exercise, however, that is probably not an important distinction, because IP policies—while they may apply formally to two-year institutions—are a much more critical issue at four-year colleges and universities. Therefore, disregarding the distinction between states with a separate board governing two-year public institutions, there were 24 states whose governance structures are for most practical purposes highly similar to Idaho's.[6] Battelle proposed that the benchmark states be drawn mainly from this category, with emphasis on the Mountain and Northwestern states.

In discussions with the Idaho State Board of Education, Battelle narrowed the list somewhat and agreed to substitute certain states with dissimilar governance structures so that the project could capture (1) the practices of Washington State University, considered an important benchmark and partner to the University of Idaho; and (2) the practices of certain larger public-university campuses that might hold lessons for Idaho universities' interaction with the Boise microelectronics sector. In both such cases (California and Texas), there is no state-level governing agency. However, *a multicampus system board* stands in relation to its constituent *campuses* roughly as the Idaho State Board does to its constituent universities: that is, there is unitary governance at the system level, but students register, faculty are appointed, and/or accreditation is recognized at individual campuses.

---

[4] The Carnegie Foundation for the Advancement of Teaching. *The Carnegie Classification of Institutions of Higher Education: Technical Report. 2000 Edition.* Menlo Park, Calif.: The Carnegie Foundation, 2001. Available on-line at http://www.carnegiefoundation.org/Classification/CIHE2000/2000_Classification.pdf.

[5] As the Education Commission observes, this most tightly controlled structure is relatively more common among states of the Mountain and Northwest regions that drafted their constitutions at approximately the same period of American political history. Washington State is an exception, however.

[6] See Table I or II of the *Structures Sourcebook.*

To choose campuses in each state where there was no prior designation, Battelle focused on sets that were in the same Carnegie Classification as either UI (predominantly) or ISU (in the minority), and within those sets emphasized those campuses that had already been benchmarked by the consulting firm MGT for the Idaho State Board, in another context.[7]

[7] MGT of America. "Equity Study: Phases I and II Draft Report." Austin, Texas: MGT. July 2001. Available at: http://www.sde.state.id.us/osbe/hipub.pdf.

The following table shows the final selection of benchmark state/campus pairs, including comparative information on the Carnegie Classification and level of sponsored R&D expenditures at each campus as reported by the National Science Foundation. As in several tables below, Idaho institutions are included at the end of the table, for reference.

Benchmark state	Benchmark university	Peer institution (by Carnegie Classification) to:	Sponsored research in FY 99 ($ millions)
California	University of California at San Diego	[8]	$461.6
Iowa	Iowa State University*	UI	$161.3
Kansas	Wichita State University*	ISU	$14.5
Montana	Montana State University*	ISU	$55.4
Nevada	University of Nevada, Reno*	UI	$48.0
Oregon	Portland State University*	ISU	$14.0
Texas	University of Texas at Austin	[9]	$257.6
Utah	Utah State University*	UI	$95.3
Washington	Washington State University	UI	$97.0
Wyoming	University of Wyoming	UI	$47.2
Idaho	University of Idaho		$62.5
Idaho	Idaho State University		$5.8
Idaho	Boise State University		$3.5

* Indicates state previously benchmarked by consulting firm MGT for the Idaho State Board in other contexts.

METHODS

Battelle conducted this benchmark survey through extensive web-based research of campus policies and direct interviews, where possible, with

- At least one staff officer of the central governing board charged with oversight and management of IP policy issues at the system level; and
- At least one vice president for research at a public research university governed by that system, or a director of technology transfer and commercialization who may be designated by that vice president.

[8] Same class as UI, but much larger and not conceived as a direct benchmark.
[9] Same class as UI, but much larger and not conceived as a direct benchmark.

Appendix 1 contains single institutional profiles. Appendix 2 reproduces the "interview guide" by which Battelle alerted interviewees to the range of topics under discussion.

ORGANIZATION

The balance of this report is organized as follows:

- **Overview of Academic IP Practice**. This section reviews the intellectual property issues that pertain to academic research, highlights the ways in which academic practice conventionally differs from corporate practice, and summarizes recent developments in federal law and policy that have had an impact.
- **Comparative Measures**. So that the benchmark findings can be reasonably interpreted, Battelle has highlighted the performance of each member of the benchmark set on certain widely recognized measures of technology transfer productivity, derived from data reported by the Association of University Technology Managers.
- **Summary of Policy and Practice in the Benchmark Pairs.** This section summarizes Battelle's findings as they pertain to the entire benchmark set, across the same spectrum of issues covered in the Interview Guide.
- **Appendix 1—Institutional Profiles**
- **Appendix 2—Interview Guide**

Overview of Evolution in Academic IP Practice

INTRODUCTION

This section reviews the intellectual property issues that pertain to academic research, highlights the ways in which academic practice conventionally differs from corporate practice, and summarizes recent developments in federal law and policy that have had an impact.

GENERAL PRACTICE ON PATENTS AND COPYRIGHTS

IP-management practice in academia rests on the same fundamental principles as in the corporate sector, but with slightly different emphases and expectations based on context. For those readers of this report who are neither attorneys, researchers, authors, inventors, nor artists, a brief review may be in order. At the most fundamental level, Article I Section 8 of the U. S. Constitution specifically grants to the legislative branch of the federal government the power "to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." These limited-duration monopolies on commercial exploitation are designed to encourage inventors and authors to put time, energy and money into their activities, secure in the knowledge that they can control the resulting knowledge and expressions. By conventional practice, owners of these rights can also *license* them to others, in exchange for royalties or other remuneration. For this privilege of control, the government requires that granted patents be published by the Patent Office and encourages that most authorial works be deposited with the Library of Congress, so that results are widely known to those who might wish to use them.

Under U.S. patent law, set out in Title 35 of the United States Code, new and useful inventions may be patented. A patent grants the right to exclude others from making, using, offering for sale, or selling the invention. Patents can be applied for only in the name of those who make the discovery or invention. However, they may be assigned by the inventor(s) to another party either at the time of application or at some later date. These basic facts apply to any inventor, whether independent or employed, and if employed, whether by a for-profit business or a non-profit entity. What varies between these sectors is the set of underlying expectations regarding to whom the patent will be assigned, under what circumstances assignment will be required, and what compensation if any will be offered the inventor. While corporate practice in these matters has been fairly steady over a period stretching back at least a century and a half to the very beginnings of American industrial research, academic practice has evolved rapidly in the last 50 years. Companies have always asserted the strongest possible rights to assignment of inventions made by their employees in the course of their duties (broadly conceived), and have not always

generously compensated inventors over and above their existing salaries or one-time bonuses for patents granted.

For many years, universities did little to assert those same rights to assignment that companies had always pursued aggressively. In part this is because academic research has always been seen as less "directed" than corporate research, and considered less likely to result in anything useful commercially, and more suitable to full disclosure through publication in academic journals. Yet, as time went by, there were more and more examples of university research that had shown substantial commercial potential. One of the earliest examples is the discovery early in the 20th century by scientists at the University of Wisconsin of methods for artificial Vitamin D enrichment. Sensing the value of this discovery, but unable to pursue it within the conventional public-university framework, engaged members of the community created the Wisconsin Alumni Research Foundation (WARF),[10] to which assignment of rights was made and which became the designated assignee for all inventions made by university faculty and staff in the course of their research duties. Over the years, WARF has built an enormous portfolio of IP that generates substantial royalties that are returned directly to the university research enterprise, and indirectly through investment in endowment that supports university research.

Even after this example, many universities failed to assert control over inventions made by their faculty. Time after time, important discoveries – such as those at the University of Minnesota open-heart-surgery program that underlie the cardiac pacemaker industry—"walked out the back door" in the hands of university faculty and staff who had not been expected or required to assign rights in their inventions, and indeed had little institutional incentive to do so. As the proportion of university research financed by the federal government increased in the years after World War II, so did confusion as to which entity—the federal government or the university—controlled the rights of assignment, and what incentives there would be for inventors to cooperate with the system. On the grounds that universities by mission are not entities aimed at commercialization, few had embraced the obligation to control or direct the commercialization process, despite several role models of earlier success.

There are also other considerations that clouded the picture: for example, academic practice usually recognizes a limited right of faculty to consult for industry, which is considered not an official university duty and not subject to ownership claims, although done within a workweek for which compensation has been paid. Also, the academic setting also includes inventors who may be students, related to the university not by employment but by some more ambiguous status. This is broadly speaking where the situation stood in 1980, at the dawn of the biotechnology revolution, and a time when important discoveries had just recently been made on federal funding at universities both private (Stanford) and public (UC-Berkeley). The Bayh-Dole Act of 1980, described below, completely changed the ground rules of university behavior on assignment of rights to inventions made by faculty, staff, and even students. There results a significant gap between academic and industrial practice that affects constituencies' understanding of policy.

[10] See http://www.wisc.edu/warf/.

U.S. copyright law, set out in Title 17 of the United States Code, presents a more complicated picture. Copyright law conveys to the creator(s) of "works of authorship fixed in any tangible medium of expression"[11] certain rights to control reproduction, display, performance, or preparation of derivative works. The process for claiming copyrights is less rigorous than for patents, and involves no particular test other than placement of a copyright notice in the specified form and place, and registration and deposit if litigation is contemplated. However, unlike patent law, copyright law specifies those circumstances (defined by both explicit agreement and circumstantial tests regarding terms of employment) under which copyrights may be owned and registered not by the creator but by the creator's employer, under the "work for hire" doctrine. Of course, copyrights can also be assigned for consideration no matter who owns them initially.

In commercial settings, employers have been absolutely rigorous about ensuring they are the owners of copyrightable material created by their employees. However, not all businesses deal with employees who meet "work for hire" tests or others willing to sign "work for hire" agreements. Specifically, most book and many journal publishers deal with independent authors who conventionally retain copyright and license certain rights to their publishers in exchange for royalties. Not coincidentally, among the class of authors used to this treatment are academic scholars, who have by tradition retained copyrights in various forms of scholarly, literary and artistic expression they may create even while on university payrolls.[12] This is roughly where the situation stood at the dawn of the age of software. Until fairly recently, software has not been eligible for patent protection (and even now only in limited circumstances), and yet it now obviously has significant commercial value.[13] The rise of software broadly construed, meaning not only computer instructional codes, but also the "content" of video and multimedia and Internet-based presentations, has sent academic IP-management policy into another crisis from which it is only beginning to recover, as reviewed below.

Certain forms of IP, such as "tangible research products,"[14] are not eligible for either patent or copyright protection but are conveyed from industry to academia, or from university to university, by a form of "bailment." Such products, often biological materials, have created a separate set of confidentiality problems of IP management for academic institutions, also reviewed briefly below. Finally, other forms of IP, notably rights in trademark, are beyond the scope of this review, although many universities have gained significant revenue by licensing them for athletic or other apparel.

---

[11] Including, for example, movies, cartoons, videos, design patterns, and even software programs.
[12] Actually most textbooks (as opposed to works of fiction) and many journal articles are published under copyright notice of the publisher rather than the author, but publishers always acquire such rights by direct agreement (work for hire or assignment) with the author, and a university is not involved even if it is the author's employer.
[13] Protection quite similar to copyright applies to the designs for electronic integrated-circuit-masks.
[14] These are often biologicals such as reagents used in assays, or cell lines, animal models, etc

EFFECT ON PATENT AND LICENSING POLICY OF BAYH-DOLE ACT

As noted above, the Bayh-Dole Act of 1980[15] took effect just as major inventions in biotechnology were being made at universities, as a result of federal funding. Before Bayh-Dole, rights in inventions deriving from federal research support rested with the agency providing the funding. In many cases, the funding agency had no way of knowing that an invention had been made on campus, remote from Washington. Even if it did know, an agency's authority to license such technology—particularly on the exclusive terms that the commercial licensees of exciting new inventions conventionally demand—was unclear and untested. Procedures by which universities could petition the sponsoring agency for release of rights to them, so that they could act as licensor themselves, were also unclear and non-uniform. Many rights in inventions were forfeit through sloppy procedures, and many correctly protected inventions could not be licensed on any terms that a commercial licensee would find satisfactory and therefore languished "on the shelf." Under these circumstances, savvy and productive universities knew they were losing the benefit of valuable IP rights but were powerless to act, and many smaller institutions had no incentive to educate themselves about IP management.

Following a long series of public hearings, Bayh-Dole was drafted to ensure that taxpayer-supported research would enter commercial practice and thus return the taxpayer's investment not by free access to IP, but by its license on commercially acceptable terms that would generate increased commerce and tax revenues. The law operates by assuring in clear and unambiguous terms that non-profit and small business recipients of federal funding may retain the rights to inventions discovered in the course of these sponsored projects, and may license them exclusively. (The law was later amended to provide virtually the same terms to any recipient of federal R&D funding regardless of size or non-profit status.) In return for grant of this privilege, Bayh-Dole requires grantees and contractors to take the following steps:[16]

- Implement agreements under which employees agree to disclose inventions developed under federally sponsored programs and to assign them to the employer;
- Disclose each invention to the sponsoring federal agency within 60 days;
- Resolve either to retain or waive title to the invention within two years, but in any event no later than 60 days before the end of the statutory period in which U. S. patent protection can be received;
- File a patent application within one year of title election, but no later than the end of the statutory period for applying for patent protection;
- Except with permission of the funding agency, not to assign rights to inventions to third parties, including the inventor, excepting patent-management firms;

---

[15] Public Law 96-517 and subsequently amended by P.L. 98-620, codified at 35 USC 18 and implemented by 37 CFR Part 401.

[16] This summary is drawn from: Council on Government Relations. "A Tutorial on Technology Transfer in U.S. Colleges and Universities." COGR, September 2000. Available at http://www.cogr.edu.

- Notify the funding agency at least 30 days before statutory deadlines if a patent application or patent will be abandoned;
- Provide to the government a confirmatory, royalty-free license to the government upon patent application;[17]
- Indicate government support on patent application;
- Establish policy to share royalties where collected with inventor, and to use the residual university share for research or technology transfer purposes;
- License inventions to small business firms if they can show they have the resources and capability to bring the invention to application;
- Require licensees to "substantially" manufacture in the U.S., unless this requirement is waived by the funding agency; and
- Report on invention utilization annually, now to a centralized database ("Edison") set up by the NIH in 1994 and shared by multiple federal agencies.[18]

For purposes of this overview discussion, it is important to appreciate that Bayh-Dole joined institutional interests to those of the inventor for the first time, by granting universities the right to collect royalties but also establishing their obligation to share those royalties with inventors. As noted by the Council on Government Relations, an association of research universities,

> "Since a vast majority of university research (particularly in the sciences) is funded by the federal government, university policy regarding technology transfer must be consistent with…the Bayh-Dole Act. While it is possible for a university to have different policies regarding the patenting and licensing of inventions which were not federally funded, in general, the university's interest in maintaining the flexibility to draw research funds from multiple sources, including the federal government, and the desire to avoid applying conflicting policies, favor construction of a single policy that is consistent with the requirements of federal law and regulation. The underlying tenet of the Bayh-Dole Act is that federally funded inventions should be licensed for commercial development in the public interest. That principle is reflected in virtually all university policies whether or not the invention is federally funded."

EFFECT ON COPYRIGHT POLICY OF RISE IN SOFTWARE AND MULTIMEDIA

In the last 50 years, works of authorship such as computer software and multimedia programming have developed obvious commercial value, and have frequently been specified

---

[17] The government requires the right to practice the invention or have it practiced on its behalf. This somewhat devalues the rights obtained by any exclusive licensee who wishes to sell products to the government that are based on practice of the invention, but was a political necessity to get the law passed.

[18] So strong is the presumption of licensing and commercialization, that the law also grants "march in rights" to the government in case technology (licensed or otherwise) is being suppressed or not commercialized with due diligence.

deliverables of sponsored-research agreements. Such works are not except in special cases eligible for patent protection, but are afforded copyright protection once fixed in tangible form and properly noticed (and, if litigation is contemplated, registered and deposited in the Library of Congress). To meet its obligations to grantors both public and private, and to assure a financial interest in any commercial value created, a university must know about certain copyrightable works its faculty have created and assert at least some degree of control over them. Naturally, this brought university interests into direct conflict with the traditional faculty prerogative of controlling the copyright (or the right to assign copyright) in artistic and scholarly works as described above.

Gradually, universities established copyright policies, sometimes integrated with their Bayh-Dole patent policies,[19] and sometimes separate. In all cases the copyright policy attempts to distinguish works in which the university will assert a "work for hire" privilege or require assignment, but will sometimes specify royalty sharing in any case, as if the university were a third-party publisher. Software written by salaried employees for administrative purposes is an easy call, as is software written by faculty under special commission or contract from the university, but software written by faculty in the course of their research activities can be a hard case, and institutional claims of ownership were resisted for many years on the basis of traditional faculty prerogative.

Consistent and rapid perfection of institutional policies was also greatly complicated by the rise of distance learning programs, first in video and now in multimedia and Internet settings. If these programs were to be treated as works of scholarship or personal course materials over which no institutional ownership had ever traditionally been asserted, then faculty would be free to license or assign them to other competing institutions, and collect compensation that would be unshared with the university. On the other hand, if the university claimed ownership, then it could sell in external markets materials that faculty had created, without any legal obligation to compensate them. Many campuses, and especially those subject to collective bargaining with faculty unions, have had great difficulty resolving this issue. Copyright policy is still in great flux at most American universities, as will be confirmed in the review of the benchmark set below. However, in general, the institution's obligation to meet its delivery requirements under federal and industrial grants and contracts has trumped traditional faculty rights.

Effect on Confidentiality of Events in Biotechnology

In their role as licensors of inventions, universities are familiar with the concept of marketing non-confidential invention disclosures to potential licensees but sharing the details only under formal non-disclosure agreements that protect their rights to seek subsequent

[19] Bayh Dole does not apply to copyrightable works, only to inventions. However, most federal grants and contracts require universities to deliver to the government a license for its use quite similar in intent to that required by Bayh-Dole.

patent protection without risk of "public" disclosure.[20] In general, therefore, universities are comfortable signing such nondisclosure agreements with private-sector research sponsors who bring pre-existing IP to a research project. In fact, many universities advise faculty members never to sign nondisclosure agreements in their personal capacities and the Business-Higher Education Forum recommends[21] they be executed by the institution, under appropriate legal oversight.

However, the rise of biotechnology has brought additional complications. Policy must now account for the exchange between industry sponsors and universities, and among universities, of biological materials which are not necessarily inventions and subject to patent protection but which are regarded as proprietary by their creators, whether academic or industrial. A great deal of the activity of university technology transfer offices is now devoted to negotiating the provisions of inbound Materials Transfer Agreements, which often come with what universities regard as onerous restrictions on the right to publish results stemming from use of these materials, and other various ownership claims. On outbound MTAs, the National Institutes of Health (NIH) now requires the least possible restriction on use of "research tools" deriving from federal sponsorship and indeed encourages making them available on the least-restrictive terms.

Policy on material transfers is usually imbedded in overall policy on industry-sponsored research. In general, universities will not agree to outright assignment of rights in inventions to an industrial sponsor. Institutions normally justify this position by reference to the need for consistency with Bayh-Dole practices, as noted above, in an environment where it is very difficult to untangle diverse flows of funding to a given faculty lab. In such agreements, universities also strongly resist any requirements of confidentiality that would restrict the right of faculty to publish and graduate students to complete and publish their dissertations, since these functions are conceived as a primary mission of the university. Universities have generally settled this issue by agreeing to brief delays in publication to allow an industry sponsor to request removal of reference to any pre-existing IP covered by a confidentiality agreement, or to request that the university seek patent protection on newly created IP. (Usually the sponsor is obligated to pay for such protection, and in return has first rights to negotiate an exclusive license to it.) The NIH now encourages delays of no more than 60 days.

EFFECT OF SPIN-OFF FORMATION OF CONFLICT AVOIDANCE RULES

As university IP policies have matured, it has become increasingly obvious that not every university-owned invention can simply be licensed to an existing commercial firm. Com-

---

[20] Public disclosure triggers a one-year clock under which patent protection must be sought under U.S. law, and usually precludes any patent protection whatever under the law of other nations. These differences are associated with corresponding differences in recognition of priority in invention claims. U.S. law recognizes as inventor the first to discover, while foreign law usually recognizes the first to file.

[21] Business Higher Education Forum. "Working Together, Creating Knowledge: The University-Industry Research Collaboration Initiative." Page 53.

panies with sufficient capital may not be interested, and the "right company" to commercialize the technology may simply not yet exist. Moreover, universities concerned with regional economic development realize that outlicensing a technology to an existing firm is rarely as powerful an outcome as creating a new one around the technology. Therefore there has arisen a movement, particularly at successful programs like Stanford's, to license IP to newly created startup companies, taking equity in the company in lieu of some cash fees. Frequently, these companies settle in the region of the university, in order to have close relations with the inventor of the underlying technology and possibly a continued sponsored-research relationship with the institution. These spin-offs or spin-outs thus help meet a variety of institutional needs and community expectations.

However, university ownership of equity also poses many potential conflicts, both for the institution and – depending on how their "inventor's share" of institutionally owned equity is handled. – for individual faculty members themselves. Sometimes the faculty inventor is also the only person sufficiently interested in the technology to pursue it commercially, and thus also becomes a principal investor in the spin-off. Even if there is third-party venture investment, a faculty member may receive additional "founder's equity" to ensure his or her participation as an advisor. If any of this happens, and if the spin-off places follow-on research funding with the inventor's university laboratory (as is usually desirable for a successful technology transfer), then there results a particularly obvious set of concerns over whose interests the faculty member is serving, whether students dependent on the faculty member are being coerced to help, and how the university can be sure it is being fully and properly compensated for any use of its laboratory or other physical assets.

Holding equity interests in such spin-offs has brought universities into conflict with both state ethics codes and federal policy on avoiding scientific misconduct. These latter policies[22] were developed following a series of highly publicized cases of scientific fraud, in order to assure the public that, at least, clinical research on pharmaceutical products would be unbiased by any interest a faculty member might hold in the licensee of university technology, or other funder. To use the NSF statement as an example, the new federal rules require disclosure by investigators to a representative of the institution of all "significant financial interest" that would reasonably appear relevant to any research funded by the federal government. Pertinent to spin-off policy is that "significant interest" is defined to include equity interest in excess of $10,000 or 5 percent ownership in a given entity. It also includes relationships relevant to faculty consulting, such as fees in excess of $10,000. Federal policy requires universities to establish an infrastructure for review and management of potential conflicts, including by revision of research plans or requirements of divestiture. Existence of these rules has required every university at least to have a conflicts policy and an infrastructure for disclosure and management, although

[22] The rules of the NIH/Public Health Service may be found at: http://www.grants.nih.gov/grants/guide/notice-files/not95-179.html. NSF's rules at: http://www.nsf.gov/bfa/cpo/gpm95/ch5.htm#ch5-6. FDA's at http://www.fda.gov/oc/guidance/financialdis.html. A good discussion of the differences between NSF and NIH can be found at: http://grants.nih.gov/grants/policy/coifaq.htm.

there is considerable variation in philosophy and implementation, and in the case of public universities, the impact of state law. In some cases, exceptions to state codes have been sought to clarify that conflicts of the kind posed by spin-off formation are different in kind from those posed by nepotism, improper contractual arrangements, etc.

Comparative measures

INTRODUCTION

To derive any useful lessons from the benchmark analysis presented in the following section, it is important first to appreciate how the members of the benchmark set perform on certain well accepted, standardized measures of productivity in IP management in academic institutions. Like many analysts, Battelle works mainly with data reported by the Association of University Technology Managers (AUTM).[23] Since the members of the set vary greatly by size, Battelle's analysis normalizes each key measure, either per $10 million of sponsored R&D conducted, or as an average, or as a ratio.

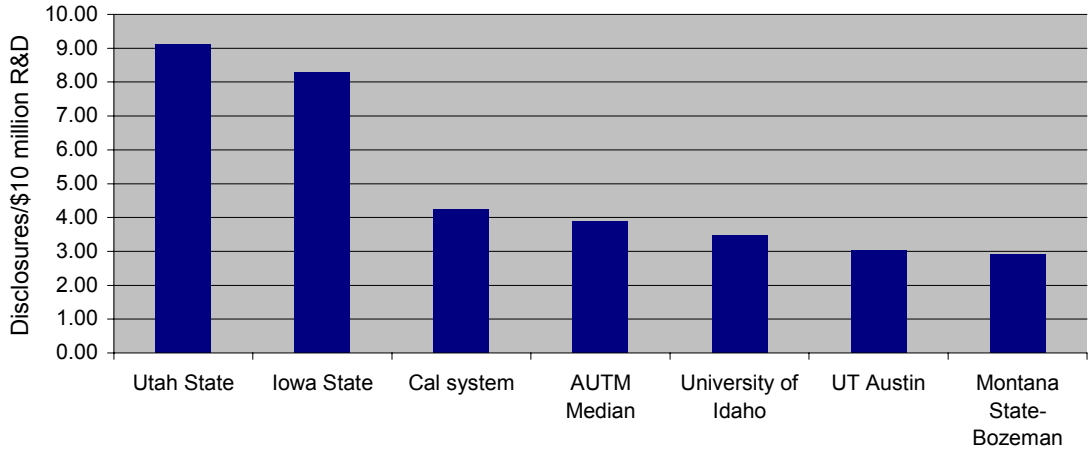
It is important to note that not every institution reports data to AUTM (including Idaho State and several institutions in the set with relatively small R&D budgets), but this does not mean their performance is negligible. Also, AUTM data are available only for the University of California as a whole, and not for the specific San Diego campus. Finally, the University of California system data include both medical and agricultural research, but data for University of Texas at Austin do not, because biomedical research is done elsewhere in the UT system, and agricultural research is done outside the UT system entirely, in the Texas A&M system. Each chart provides for comparison the median for the normalized measure, drawn from all AUTM institutions.

[23] See http://www.autm.net/index_ie.html.

DISCLOSURES

The first key measure of IP productivity is flow of patent disclosures from faculty inventors per $10 million of sponsored R&D budget. This indicator measures some combination of invention productivity and compliance with disclosure rules. The chart below shows that of the reporting institutions, Utah State and Iowa State are clearly the outperformers relative to the set, and to the median value of the normalized measure for all institutions reporting to AUTM.

Normalized invention disclosures.
Source: AUTM 1999 Survey

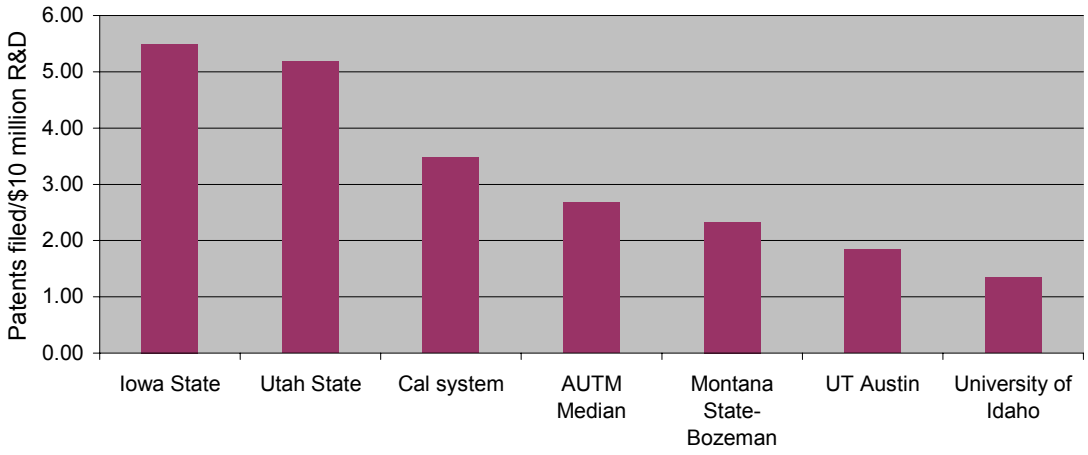


Battelle
. . . Putting Technology To Work

PATENTS FILED

Similar analysis can be done on patent applications filed by the university during the reporting period, again normalized by size of the research budget. This indicator measures some combination of disclosure flow, suitability of that flow to patenting, and available budgets or sponsorship for patenting. Here the data suggest leadership by the same institutions.

Normalized patent filings.
Source: AUTM 1999 Survey

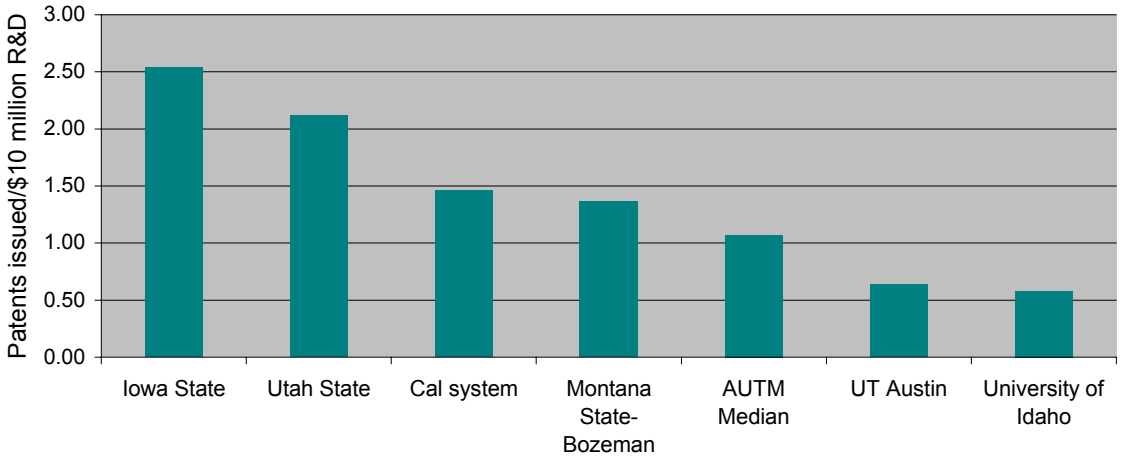


Battelle
. . . Putting Technology To Work

PATENTS ISSUED

A final indicator in this general set is patents issued to the university, again normalized by size of the research budget. This represents some combination of the two previous measures and their actual quality as patentable claims. The strong performers are the same, suggesting that once these institutions make the decisions to patent, their judgment is good, and results are in proportion to the flow.

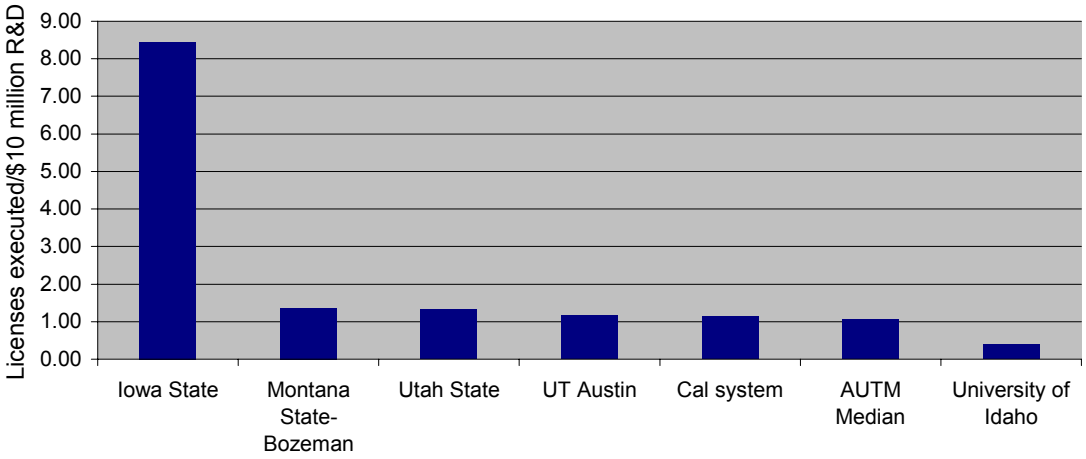
Normalized patents issued.
Source: 1999 AUTM Survey



LICENSES EXECUTED

AUTM data also provide a window on the number of licenses executed in a year. On a normalized basis, most institutions in the set other than Iowa State are near the median. Battelle has not investigated why Iowa State's performance was so strong or whether that is an artifact of one year's data. UT Austin performs relatively more strongly on this measure than on any of the others above.

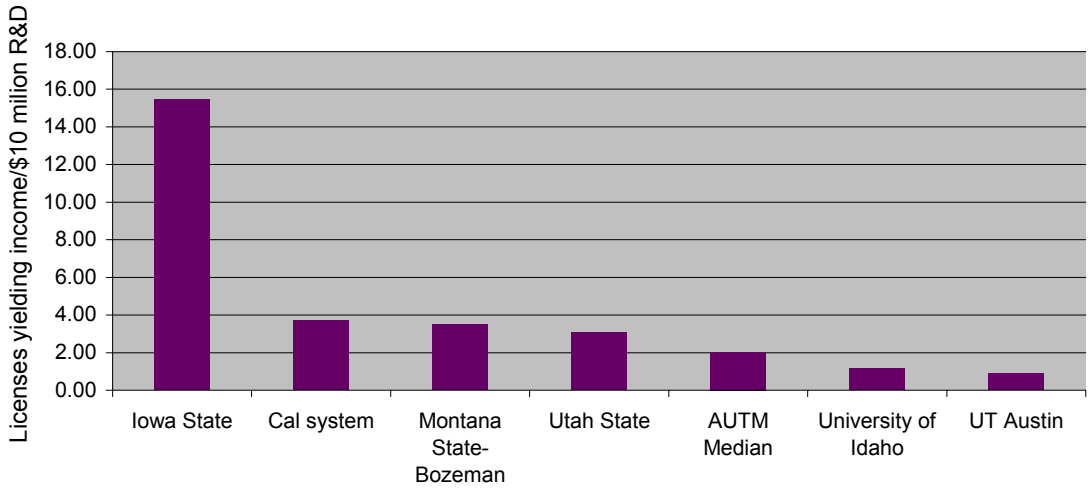
Normalized licenses executed.
Source: 1999 AUTM Survey



LICENSES YIELDING INCOME

Another way to look at licenses is to measure how many are currently active and yielding income. There is somewhat more variation on this measure, and UT Austin again drops to a surprisingly low position. Together with the previous graph, these results suggest that some of the best-performing campuses on these measures may be those with active programs to license seed strains or other agricultural IP, usually on a non-exclusive basis that results in a high number of issued and active licenses.

Normalized active licenses yielding income.
Source: 1999 AUTM Survey

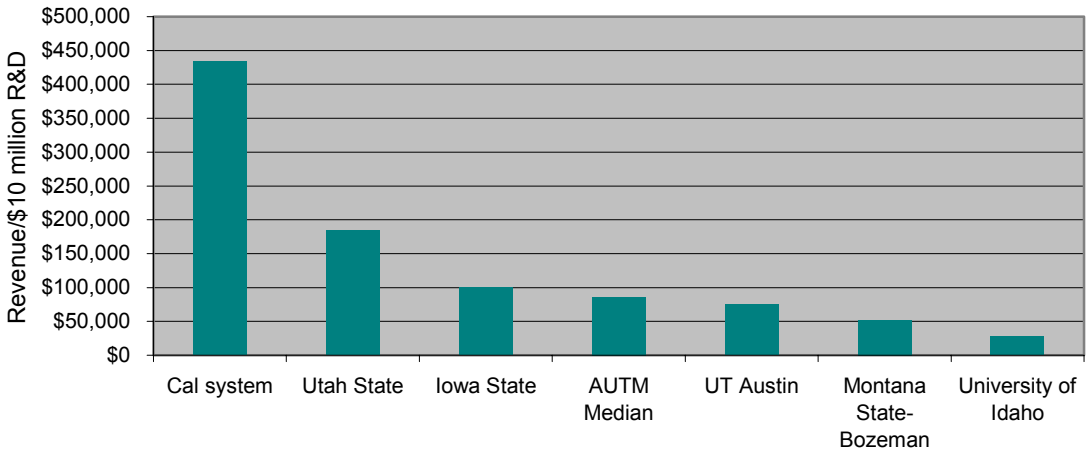


Battelle
. . . Putting Technology To Work

LICENSE REVENUE

Many analysts want to track the dollar volume of licensing activity, either through cash royalty or cashing of equity interest in startups. The Cal system and Utah State dominate the benchmark set when adjusting for the size of their R&D budgets.

Normalized license revenue.
Source: 1999 AUTM Survey

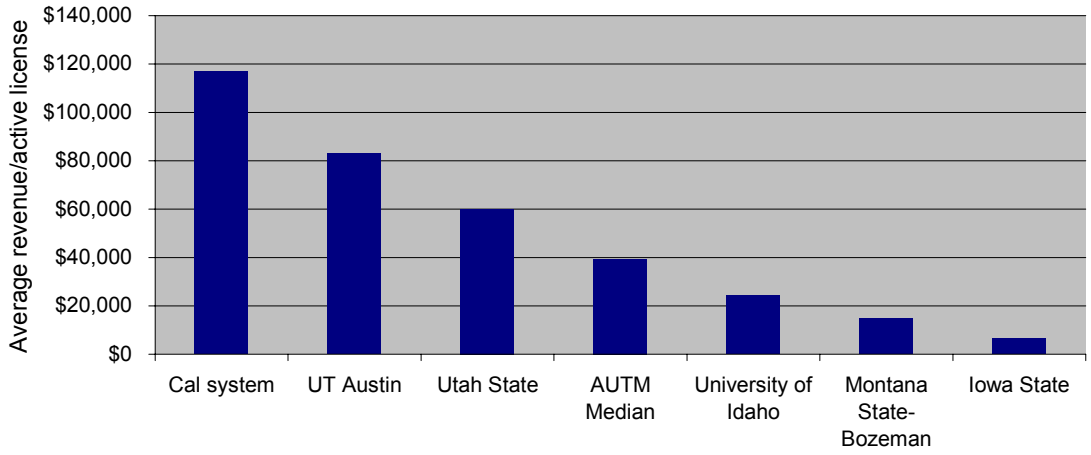


Battelle
. . . Putting Technology To Work

AVERAGE REVENUE PER LICENSE

Another way to look at licensing revenue is by average revenue flow per active license. Again, Cal and Utah State perform well, and UT obviously has some very high earners among its active licenses (and an average not diluted by low-revenue, non-exclusive agricultural licenses).

Average revenue for active licenses.
Source: 1999 AUTM Survey

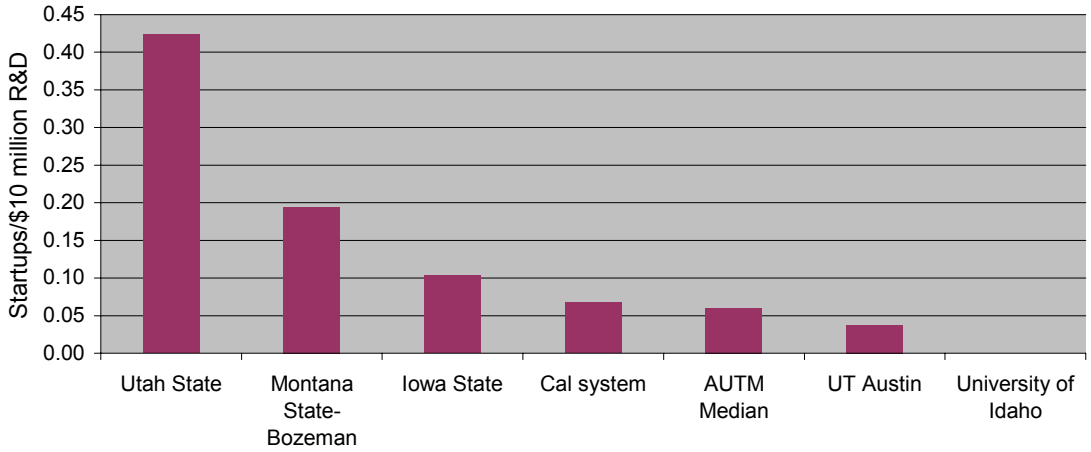


Battelle
. . . Putting Technology To Work

STARTUP FORMATION RATE

Sometimes it is equally important to track the number of spin-offs that are formed as a result of licensing activity, since spin-offs tend to be local to the generator of the knowledge, whether or not the faculty inventor takes an active role. Most of the benchmark institutions for which data are available exceed the AUTM median for startups normalized by the size of the R&D budget. In the subject year University of Idaho had no reportable startups. However, since this ratio will be extremely variable across years for smaller institutions, it may be desirable in this case to "smooth" the results by also looking at several years together. If data for startups and R&D expenditure are aggregated over the most recent four years reported by AUTM, then UI's ratio of startups per $10 million of R&D would be approximately 0.05.

Normalized startup formation.
Source: 1999 AUTM Survey

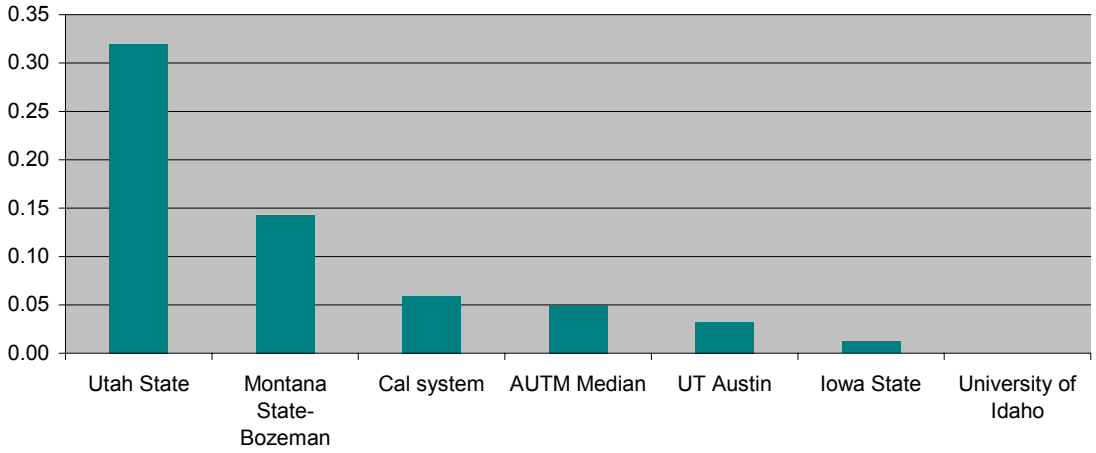


Battelle
. . . Putting Technology To Work

STARTUP-TO-LICENSE RATIO

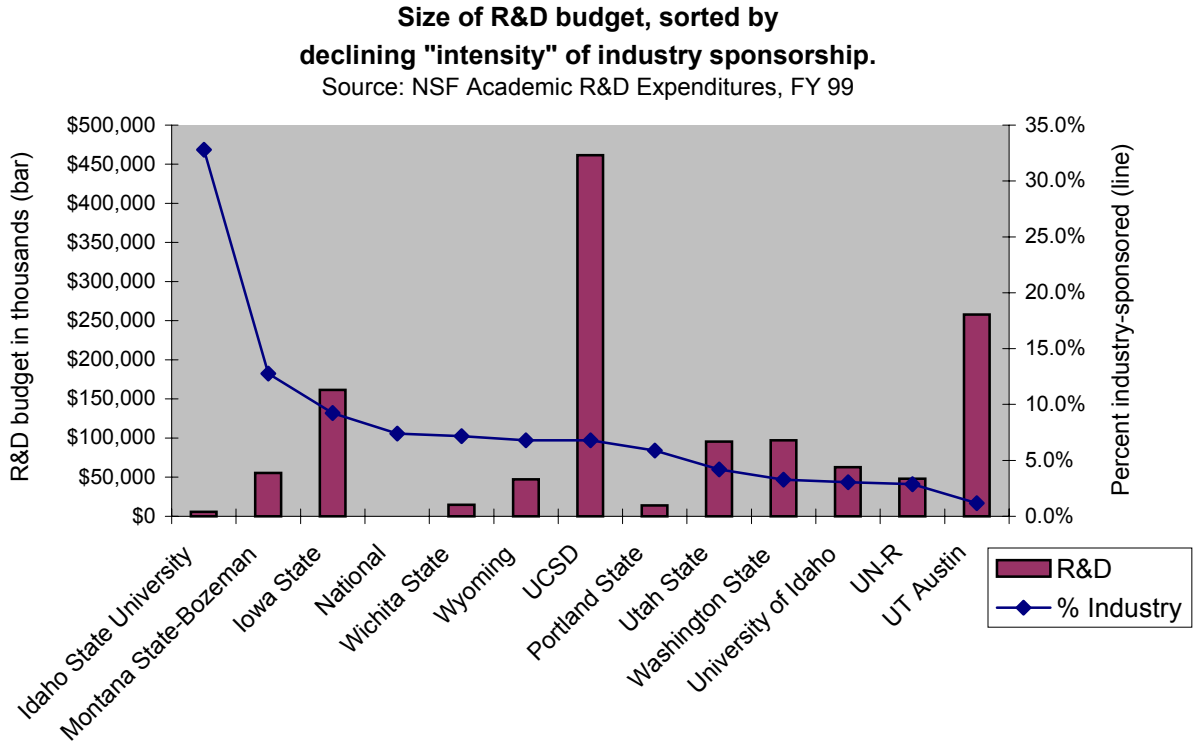
One other way to look at startup data is to compute the ratio of startups to straight licenses. Utah State and Montana State appear highly entrepreneurial by this measure. If the data are aggregated over the most recent four years, for the same reason as discussed above, the start-up-to-license ratio for UI would be approximately 0.11.

Startup-to-license ratio.
Source: 1999 AUTM Survey



INTENSITY OF INDUSTRY SPONSORSHIP

One other important measure is how intertwined an institution's R&D program is with industrial sponsorship. Using data from the National Science Foundation, it is easy to compute the share of any university's R&D budget that comes from industry sponsorship. (In the case of this indicator it is possible to obtain data on all the benchmarks at the campus level.) The following figure—which combines this ratio with a bar showing size of the overall R&D budget—shows outsized performance by Idaho State and Montana State. Of interest is that the two largest R&D budgets on an absolute scale—UCSD and UT-Austin—both perform below the national average, as does the University of Idaho. Idaho State performs comparatively well because of subcontracts and other support it receives from the Idaho National Engineering and Environmental Laboratory (INEEL). Although INEEL is a federal laboratory, it is managed by a private-sector Limited Liability Company, and support received from this vehicle is categorized as "industrial."



Battelle
. . . Putting Technology To Work

Summary of Policy and Practice in the Benchmark Pairs

INTRODUCTION

This section reviews and summarizes the activities of the benchmark state/campus pairs, drawing on more-detailed profiles that can be found in the following section. The section is divided according to various topics covered by Battelle's interviews with representatives of the benchmarks. The discussion includes in each case a summary of the models in use in the benchmark set, and where possible, Battelle's observations on what constitutes best practice.

DIVISION OF POLICY RESPONSIBILITY

Models used in the benchmark set

Division of policy responsibility between the state and campus level in the benchmark set ran the full gamut of options.[24] At one extreme was Oregon, with an extremely centralized and hierarchical structure featuring IP policy in law, regulation and policy. At the other was Utah, with no pertinent policy responsibility at the state level. Iowa and Kansas feature what could be described as minimal centralized policy roles: The rest of the set falls somewhere in between, with IP policy usually specified in board policy, except at the University of Texas system where it has the status of administrative regulation. Many states had ethics laws pertaining to all agencies including those of higher education. However, absence of an "ethics" entry in the state law column does not mean a state ethics law does not exist—only that it was not highlighted by literature reviewed by Battelle or by interviewees.

Comparison with Idaho

Formerly, Idaho maintained a broad and general IP policy, which could be found in the published regulations of the State Board of Education. The Board also reserved discretion to review, approve or order changes in the particular, detailed policies in place at any of its institutions. In this respect, the situation in Idaho resembled most closely that in Kansas or Iowa, among the benchmarks. However, the Board is now considering a somewhat more comprehensive policy statement that will reside in its policy manual. While the draft reviewed by Battelle does not require uniformity among campus policies and procedures, it is much more comprehensive in scope than the prior regulation, and therefore

[24] For purposes of this particular analysis, the benchmark set was the six states with governance structures like Idaho's and the two where a state university system plays a role somewhat analogous to that of a state governing agency. Wyoming and Washington State are omitted because, for differing reasons, there is no relevant distinction (see profiles that follow).

somewhat more restrictive, while not quite as centralized as the policies of the Cal, UT or Oregon systems.

State	At the state agency/state system level			At the benchmark campus level	
	Law	Regulation	Policy	Policy	Procedure
California (Cal system)	• Ethics (all agencies)		• IP • Conflict of interest • Outside compensation	• Distribution of campus share of royalty • All copyright policy • Consulting	• Conflict disclosure
Iowa			• Approval of institutional IP policy	• IP • Educational materials • Conflict of interest and consulting	• Conflict disclosure
Kansas			• Outline only of IP policy	• IP • Conflict of interest • Conflict of commitment	• Conflict disclosure
Montana			• IP • Copyright • Courseware • Conflict of interest		• IP procedures consistent with board policy • Conflict disclosure
Nevada			• IP • Conflict of interest		• IP procedure consistent with board policy • Conflict disclosure
Oregon	• IP • Ethics (all agencies)	• IP • Conflict of interest	• IP • Outside activi-ties	• IP policy optional	• Conflict disclosure

State	At the state agency/state system level			At the benchmark campus level	
	Law	Regulation	Policy	Policy	Procedure
Texas (UT system)	• Conflict of interest (all agencies) • Equity ownership	• IP	• Software • Conflict of interest • Trademark		• Procedures consistent with board policy must be adopted • Conflict disclosure
Utah	• Employee inventions (all agencies) • Ethics (all agencies) • Government records (all agencies)			• IP • Conflict of interest • Conflict of commitment	• Conflict disclosure
Idaho	• Ethics	• IP and conflict (repealed)	• IP and conflict under review	• IP • Conflict • Consulting	• Conflict disclosures

Observations on best practices

There is little in the IP/tech transfer literature to distinguish any one of these strategies from the others as a best practice. However, it is clear that multilevel elaboration of IP policy (law, regulation, policy, campus policy) may give rise to contradiction or inconsistency, and may allow various internal or external parties at interest to play one statement off against another.

Also, since states frequently have ethics and disclosure laws that pertain to all departments, it is probably good practice for state higher education governing agencies to seek specific amendments or other clarifications of both laws as they apply to IP issues in the academic sector. For example, ethics laws drafted to prevent nepotism may need to be supplemented by laws empowering governing boards to craft conflict-of-interest policies that enable spin-off formation but are consistent with NSF/PHS guidelines. Or, freedom-of-information laws may need exemptions for intellectual property under review by campus offices, or for confidential material contributed by corporate research sponsors.

DIVISION OF OPERATING RESPONSIBILITY

Models used in the benchmark set

Involvement of the state-level agency in operating matters generally tracks the division of policy responsibility. State involvement is strongest in Nevada, Oregon, and Texas where state- or system-level general counsel played a significant role in approving or reviewing contracts associated with IP management. However, in none of these cases does the state- or system-level office finance the campus-level IP management function.

At the campus level, virtually all the IP management offices are functions of the Vice President or Vice Provost for Research. Two—California and Texas—are operating at surplus in the sense they generated more licensing revenue for their campus than their budgeted costs, although neither office charges a management fee or has a share of royalties devoted specifically to its budget.

Three IP management offices—in Iowa, Montana and Washington State—are affiliated with a research foundation that acts as patent and licensing agent. Each campus's reason for using such an entity was different: Montana State's was set up to hold equity, Washington State's to avoid restriction on use of outside patent counsel, and Iowa State's for unspecified reasons. In such cases, the budget status of the associated office is difficult to measure, as it often depends on multiple funding flows. Several more campuses were considering use of a controlled or affiliated foundation, or adding additional missions to a philanthropic foundation (not permitted in Oregon).

In virtually every case, management of conflict of interest disclosure was closely related to management of IP. In most cases, the conflict function reported to the same vice president or vice provost, through a "sibling" or "cousin" administrative office. Somewhat notable is Montana State University, where conflict management is performed *directly* by the same office that does IP.

Comparison with Idaho

Aside from its review of retrospective and exception reporting from the institutions, the Idaho State Board of Education presently exercises little operational control over the IP arrangement of its research institutions, by comparison with the more centralized examples from the benchmark set. Each institution maintains legal review and signatory authority, each has developed and published its own detailed policies,[25] and each has defined a locus of responsibility for operational management of IP:

---

[25] At UI, see http://www.its.uidaho.edu/fsh/5300.html for IP, http://www.its.uidaho.edu/fsh/3260.html for consulting, and http://www.its.uidaho.edu/fsh/5600.html for disclosure. At ISU, see http://www.isu.edu/references/fs.handbook/part4/4_1/4_1j.html#1 for IP including conflict of interest, and http://www.isu.edu/references/fs.handbook/part4/4_2/4_2g.html on consulting. At BSU see http://diamond.boisestate.edu/~margene/policies/section6/6320-b.html for IP, http://diamond.boisestate.edu/~margene/policies/section5/5040-a.html for conflict-of-interest, and http://diamond.boisestate.edu/~margene/policies/section5/5366-b.html for consulting.

- At UI, one of the research contract officers reporting to the Vice President for Research and Graduate Studies reviews disclosures, handing them off to an affiliated but independently staffed Idaho Research Foundation, which may decide to undertake commercialization or decline the assignment;
- At ISU, operational IP issues are handled mainly by the Chief Research Officer himself or others on his staff with appropriate skills.
- At BSU, the new Vice President for Research (actually the office itself was only just created) has assumed responsibility for IP operations.

State	At the state level	At the benchmark campus level		
	Office/role	IP		Conflict
		Office	Comment	Reporting line
California/UCSD	• University of California Office of the President General Counsel/ resource	• Technology Transfer and Intellectual Property Services (TTIPS)	• In surplus, but not by design. • Reports to Vice Chancellor for Resource Management and Planning.	• Office of Contract and Grant Administration (same line as TTIPS)
Iowa/Iowa State		• Office of Intellectual Property and Technology Transfer (OIPTT) • Iowa State University Research Foundation	• Office supported by return from foundation and university. • Reports to Vice Provost	• Vice Provost
Kansas/Wichita State		• Office of Research Administra-tion	• Reports to Vice Provost for Research	• Office of Research Administration
Montana/Montana State-Bozeman		• Office of Intellectual Property Administra-tion and Technology Transfer (IPATNT) • Research Develop-ment Institute	• Reports to Vice Provost for Research, Creative Activities and Tech Transfer	• IPATNT, except for equity holding, which must be reported to the Regents.

Nevada/UNR	• Regents General Counsel (for liability) and Chancellor (to sign high-value contracts)	• Office of Technology Liaison (OTL)	• Reports to Vice President for Research.	• Office of Sponsored Projects Administration, (in same reporting line as OTL)

State	At the state level	At the benchmark campus level		
	Office/role	IP		Conflict
		Office	Comment	Reporting Line
Oregon/Portland State	• Department of Higher Education Director of Legal Services/Office of Attorney General (for high-value contracts)	• Vice Provost for Research and Graduate Studies	• Contracted out to Oregon University of the Health Sciences.	• Vice Provost
Texas/UT Austin	• UT System Office of General Counsel (for legal sufficiency)	• Office of Technology Licensing (OTL)	• Believed to be self-supporting. • Reports to Vice President for Research.	• Office of Sponsored Projects (same reporting line as OTL)
Utah/Utah State		• Technology Commer-cialization Office (OTC)	• Reports to Vice President for Research.	• Vice President for Research–support services
Washington/Washington State University		• Office of Intellectual Property Administra-tion (OIPA) • USU Research Foundation	• Subsidized partly by research park of the foundation. • Reports to Vice Provost for Research.	• Office of Grant and Research Development (same reporting line as OIPA)
Wyoming/University of Wyoming		• Wyoming Research Products Center	• Joint venture of university and Wyoming Business Council. • Reports to Vice President for Research.	• Vice President, but consulting disclosures go to the Provost in a different reporting line.
Idaho/3 institutions	• Idaho State Board of Educa-tion may review retrospective reports on operations	• Research VP offices of all 3 institu-tions	• At UI there is also an affili-ated Founda-tion	• Same Vice Presidents

Observations on best practices

Opinion in the technology transfer community is divided on whether it is a best practice to require technology transfer offices to self-support, and if so by what mechanism. The point may be moot because most offices are budgeted in advance of knowing what the revenue from a given year will be. Even if they are in surplus, it is usually implicitly rather than explicitly. Affiliated foundations tend to be explicitly in surplus because their staff costs are usually on the books of the university office.

There is a strong school of thought—exemplified in this set by UNR and UT-Austin and even UCSD—that IP management offices cannot succeed in their mission if faculty regard them as essentially a police agency. In this view, obtaining the necessary cooperation from faculty requires tech transfer offices to take on many "service functions" that are not necessarily cost-effective, such as negotiation of materials transfer agreements, and speculative patenting expenses for inventions that do not yet have an industry licensee in view. In addition, adherents of this view believe it is difficult properly to credit their offices with incremental sponsored research funding that came as a side effect of their efforts to license technology.

SCOPE OF IP OWNERSHIP CLAIMS

Models used in the benchmark set

The system profiles included in this report combine for purposes of comparison information that may be included in up to two or three separate policies, including policies on inventions, copyrightable works, and educational materials.

As anticipated by the commentary quoted above from the Council on Government Relations, claims of IP ownership in the benchmark set are generally justified on the grounds that good control of IP is necessary to advance discoveries into actual practice, which is considered one of the missions of the university. Also cited is the need to prevent misuse of public resources that are granted or contracted by federal or state agencies in the course of sponsored research and other activities. Several policies explicitly cite the Bayh-Dole Act but also make clear that similar expectations pertain to research that is not federally sponsored. Most policies also cite the need to create fair and consistent incentive structures for faculty inventors, and some make explicit the link between protecting the rights and incentives of inventors as individuals and the institutional goal of advancing research into practice.

Adjusting for non-uniformity in language and structure among the policies, the scope of these systems' claim to assignment rights in inventions is remarkably uniform. In virtually every case, ownership is asserted to "any invention" made using university funds or resources (including either institutional or external sponsored funds), whether or not the invention is patentable. The coupling of the phrase "any invention" with "university resources" is apparently useful in capturing inventions by students, who are mentioned explicitly in only a few cases, but are clearly intended to be covered. Non-faculty staff is

often mentioned explicitly. Some but not all policies explicitly exclude from the claim of ownership those inventions made on an employee's own time (including faculty consulting time, provided university resources are not used, and subject to policies on consulting and conflict of commitment). Again, even where this is not stated, it is a clearly understood consequence of the scope of the claim. There is often an exclusion for inventions rights to which may be returned or released to the inventor by formal action of the university, subject to the notice required by the Bayh-Dole act if the research was federally funded. In some cases, inventors of technology thus released have the option of asking the university to pursue protection and licensing on their behalf, subject to royalty sharing.

Copyright policy is usually somewhat more ambiguous and difficult to follow, for the historical and contextual reasons described above. In most cases, ownership (either by virtue of "work-for-hire" doctrine or by expectation of assignment) is asserted to copyrightable work (including software) either created in the scope of official duties (including on sponsored research projects), or explicitly commissioned, or using "significant" university resources. In virtually every case, there is language excluding from this claim scholarly journal or book articles and literary or artistic works. In some cases, policy further stipulates that the resources necessary to create such works are not to be considered "significant" from the standpoint of the policy. A few commit to a promptly rendered decision in writing on whether a given work is subject to the copyright ownership claim.

Five of the benchmark policies make explicit mention of educational courseware as a separate category of copyrightable expression. Of these, two claim ownership to courseware that is "university sponsored" (Iowa State) or "institution directed" (Wichita State), thus leaving to the creator all ownership in faculty-initiated material that does not use significant university resources. Three others make broad claim to all, or effectively all, courseware "resulting from activities of the university" (Montana State University, Portland State University, University of Wyoming). Most claims of ownership made through either route are accompanied by a willingness to compensate faculty additionally for any university-owned courseware that is used off-campus. However, it is clear that these negotiations are to be conducted from the relatively strong position of ownership of copyright.

The obligation to disclose inventions is entirely uniform in every institution surveyed. Most institutions make a nominal claim to disclosure of software, but recognize there is unlikely to be full compliance. Software disclosure is loosely enforced at UCSD and UT-Austin. In these cases, technology transfer offices ask software creators to place a university copyright notice on all software and then deal with questions of protection and licensing only when an expression of commercial interest is received. At Montana State and Washington State, disclosure for software is encouraged only in cases where it is judged to be potentially patentable.

Comparison with Idaho

Practice at UI and ISU is fully within the benchmark norms, including assertion of ownership rights to university-sponsored or university-commissioned copyright courseware.

BSU's current policy – which the new Vice President for Research intends to revisit once state policy is settled – is less conventional. It makes fine distinctions between "major" and "minor" use of university resources in the case copyright materials, and in the case of inventions, places the burden on the faculty member to determine whether the invention is "worth patenting" before imposing a disclosure obligation. In general, all institutions intend to give further attention to equity issues involved in claims of ownership on courseware once state policy is settled.

Observations on best practices

On inventions, practice is so uniform that there is little room to identify best practices, except possibly to note Iowa State's practice of asking investigators to initial on sponsored-research transmittal sheets a re-statement of the obligation they have already assumed under their employment agreements to disclose and assign IP in the scope of the institution's claim. On copyrights it is far from clear that anyone has resolved the underlying difficult issues. Copyright policies that call out courseware as owned by the university no matter what, but with willingness to compensate for off-campus use, probably represent state-of-the-art.

One best practice seems to be copyright policies that do not place unreasonable burdens on authors of software. The approach of "notice now, protect and negotiate later" probably makes sense for all except obviously patentable software products and commissioned courseware.

ROYALTY DISTRIBUTION

Models used in the benchmark set

There is extremely wide variation in royalty distribution policy among the benchmark set. All institutions subtract advanced patent expenses from gross income, and three institutions (and one more is actively considering it) charge a percentage administrative fee on the balance before any further distribution is made. However, in none of theses cases did the fee—ranging from 15 to 30%—cover the entire cost of the university technology transfer office. In these and in all cases where *no* fee is charged, offices are supported by a budget funded by a combination of general funds, indirect cost recovery, and the university's share of net royalties, which under Bayh-Dole must be allocated either to research or technology transfer functions.

The inventor's share of net royalties varies widely, from 25 percent (the low end of a sliding scale based on high dollar volume) to 33 percent (the lowest fixed inventor's share) to 60 percent (the highest absolute share) to 100 percent (the highest end of a sliding scale at low dollar volume).

More than half the benchmark set return some portion of the remaining balance after the inventor's share to the college or department of the inventor. In the case of a departmental share, it is often expected but not formally required that some portion of this amount

will support the inventor's lab. In three cases there is an explicit percentage share targeted to the inventor's lab.

Comparison with Idaho

Royalty distribution policy at the Idaho institutions is generous to faculty members but also normally includes a departmental distribution. As noted above, BSU intends to revise its policy once any changes in Board policy become final.

State/benchmark campus	Administrative fee	Inventor's share	Residual/comment
California/UCSD		35%	• 50% to the university (central). • 15% to the campus (60% to lab/ 40% to unit).
Iowa/Iowa State	15%	33%	• 33% to college. • 33% to Research Foundation.
Kansas/Wichita State		50%	• Residual to the university.
Montana/Montana State-Bozeman	30%	50%	• 50% to university, of which 66% to 33%, on a sliding scale, is dedicated to the inventor's lab.
Nevada/UNR		60%	• 25% to academic unit, 10 points to the school, 15 to the department. • 15% to the university.
Oregon/Portland State		40%-30% on sliding scale	• Residual to the university.
Texas/UT-Austin		50%	• 50% to the system, for use by the campus.
Utah/Utah State	[15% fee under new policy under consideration]	100% to 33% on sliding scale.	• 0-33% on sliding scale to the department for the inventor's lab. • [20-30% under new policy] • Residual to the university. • $1000 bonus for patent.
Washington/Washington State	20%	100% to 25% on sliding scale.	• Residual to university of which 20% is split between inventor's department and college.

State/benchmark campus	Administrative fee	Inventor's share	Residual/comment
Wyoming/University of Wyoming		60%	• 40% to the university, of which half to the college or department.
Idaho/UI	None, but see at right for use of the residual	40%	• 40% to the Foundation, to defray its expenses and other purposes. • 20% to the college, of which at least half to the department
Idaho/ISU		50%	• 25% to the department • 25% to the university
Idaho/BSU **N.B.: Rates shown are for inventions only. Rates for copyright materials are separate and more complex. Policy subject to future revision.**		20% until direct costs are recovered 50% afterward	• 80% to the university until direct costs are recovered • 50% afterward, with a recommendation that part be returned to the department

Observations on best practice

It is worth noting that the highest inventor's shares seem to be associated with campuses that are not strong performers on the normalized AUTM statistics presented in the previous section. Causality is not clearly established, but it seems unlikely that high inventor's shares in themselves cause poor performance. More likely is that institutions with poor performance try high inventor's shares on the theory they will lead to better technology transfer results, and then find that they do not. (One counterexample to this theory is Utah State, where normalized disclosure flow is very strong, but which is presently considering moving from a 1/3 share to a 50 percent share for inventors at the low end of a sliding scale. It is of course too early to tell what effect this will have).

Notably, institutions like UT Austin and University of Wyoming believe that their high inventor's shares are actually a barrier. They would like to substitute sliding scales that allow them to distribute at least some rewards to colleges and departments, whose institutional buy-in may be more valuable than direct incentive to the individual inventor. Furthermore, leading institutions like UCSD and Iowa State confirm that their own relatively low inventor's shares are not a barrier to success. It is clear that best practice relates to overall faculty and administrative culture rather than to the specific share adopted.

TREATMENT OF EQUITY

Models used in the benchmark set

There is a wide range of policies in the benchmark set on whether and how a university may hold equity in a spin-off company in lieu of certain cash royalties. Only three institutions unambiguously hold this authority, either directly or through an affiliated foundation in the case of state systems that are constitutionally prohibited from holding equity in for-profit enterprises. Counting also those institutions that think they may have this authority or are soon to receive it, there is approximately an even division between those that distribute the inventor's share directly to him or her, and those that manage such shares centrally, with distribution to the inventor of his or her share of any liquidity event. At none of the benchmark institutions has there been particular controversy (as there has in some universities) over whether an inventor who also holds personal, founder's stock in a company would have to forfeit any share of equity received by the institution in lieu of cash royalty.

Comparison with Idaho

UI's Research Foundation has held equity from time to time, although there is no formal mention of equity or its distribution in its formal IP policy. Neither ISU nor BSU believes the issue is relevant to their current relatively small portfolios of IP.

State/benchmark campus	Can hold equity?	Comment	Policy on distribution to inventor
California/UCSD	Yes	UCSD has higher "propensity" for equity than UC-Berkeley because of its commitment to economic development.	Choice to take inventor's share of equity directly or receive distribution in cash upon liquidity event (encouraged).
Iowa/Iowa State	TBD	Research Foundation may accept equity in future.	
Kansas/Wichita State	TBD	Only one case to date.	
Montana/Montana State-Bozeman	Yes	Held by RDI foundation.	Inventor's share of equity distributed directly.
Nevada/UNR	TBD	Philanthropic foundation occasionally used. Special purpose corporation under study.	

State/benchmark campus	Can hold equity?	Comment	Policy on distribution to inventor
Oregon/Portland State	TBD	Constitutional amendment approved subject to referendum. In the interim an affiliated foundation could hold equity, but Portland State's is used for philanthropy only and there may be only one per campus.	
Texas/UT-Austin	Yes		Components of UT system have discretion on distribution of inventor's share and have asked for guidance from their system board.
Utah/Utah State	TBD	Has been done occasionally. An affiliated foundation is under study.	
Washington/Washington State	TBD	Probably would be held by research foundation.	Probably would be distributed upon a liquidity event.
Wyoming/University of Wyoming	TBD	Probably would be held by the endowment foundation.	Probably would be distributed upon a liquidity event.
Idaho/UI	Yes	Through Idaho Research Foundation	Probably would be distributed directly.
Idaho/ISUI	TBD		
Idaho/BSU	TBD		

Observations on best practice

The ability to hold equity is probably a best practice, although how the inventor's share should be managed is far from settled. Isolating the inventor's share of institutionally held equity under university ownership (rather than issuing it directly) makes it easier to comply with NSF/PHS conflict-disclosure and management rules and still take sponsored research from the spin-off back to the inventor's lab, because the inventor does not have an actual equity interest. However, the potential for institutional and personal conflict still exists. Moreover, no matter which choice is made, the institution must still avoid using any inside information that its licensing office has about the spin-off in making hold/sell decision regarding publicly traded securities. Therefore, equity shares held by an institution usually must be managed by a Treasurer's office or asset manager held at arms length. This somewhat reduces the university's leverage over economic-development outcomes.

INDUSTRIAL RESEARCH

Models used in the benchmark set

There is almost no variation in the benchmark set in stated policy on industrially sponsored research. It is uniformly welcomed. All these universities are willing to sign nondisclosure agreements, inbound material transfer agreements that do not contain onerous provisions, and otherwise to protect pre-existing IP that a sponsor "brings to the table." However, with regard to newly discovered inventions, nearly all the benchmark universities insist on holding title subject to a right by the sponsor to negotiate an exclusive license. Wichita State offers the potential for assignment of inventions, provided that fully loaded costs are paid by the sponsor, but this has never actually occurred during the tenure of the interviewee.

Institutions in the benchmark set also insist on freedom of faculty and students to publish their work, offering delays in publication ranging from 30 days to 90 days to permit industrial sponsors to request removal of confidential information or the protection of newly discovered IP on their behalf.[26] Portland State identified as particularly "horrible" the standard research contract of the Semiconductor Research Consortium, which the interviewee said can "force" the university to advance protection expenses without assurance of reimbursement. With respect to the microelectronics sector of interest in Boise, neither UCSD nor UT Austin indicated any unusual problems with that industry. However, UCSD will forego unit-based royalties in certain licenses for use in communications equipment, in favor of one-time or annual fees, to avoid burdening its licensees with "stacked" royalties. Several institutions in the set likewise make nonexclusive and relatively permissive licensing arrangements for plant species.

---

[26] Wichita State permits further delay of up to a year in all to allow for actual filing of a patent application once the request has been made.

In most cases, the university technology transfer office consults with its sibling sponsored-research office on the IP terms of industry-sponsored research, especially when non-standard contracts are used or when the sponsor is not sophisticated about academic practice.

Comparison with Idaho

There is nothing out of the mainstream about policy or practice in industrially sponsored research at any of the institutions, although ISU is highly flexible on confidentiality provisions stemming from support from INEEL, provided there is agreement by the participating faculty member. In addition, BSU offers many of its industry sponsors royalty-free non-exclusive rights to IP developed under their sponsorship, as an inducement for them to negotiate royalty-bearing, exclusive licenses.

Observations on best practice

In a recent and highly useful study,[27] the Business-Higher Education Forum specifically identifies best practices including the following, in managing industrially sponsored or collaborative research:

- For university-industry relations of sufficient magnitude, consideration should be given to a master-contract/task order system;[28]
- Universities should develop model agreements that do not unduly disadvantage small and medium-sized business;[29]
- Industry should expect rights to publication delays of no longer than 60 to 90 days;
- Industry should expect that "it will usually be appropriate for the university to retain ownership";
- Universities should update copyright policies to allow industry sponsors licensing terms on a basis similar to that for patents;
- Universities should coordinate and possibly collocate various offices involved in work with companies

[27] Business Higher Education Forum. "Working Together, Creating Knowledge: The University-Industry Research Collaboration Initiative." Available at http://www.acenet.edu/programs/bhef/.
[28] In place at the University of Texas System, particularly for clinical research.
[29] One such agreement was developed years ago by the Government, University Industry Research Roundtable of the National Academies and by the Industrial Research Institute, and is available at from the GUIRR website.

CONSULTING/CONFLICT ISSUES

Models used in the benchmark set

There is little variation among the benchmarks in consulting policy. Most policies accept or even encourage industry consulting as one way for faculty to develop their professional skills, especially in all those non-medical disciplines where no clinical practice is operated by the university itself. Most have specific guidelines on the number of days that faculty may consult while still being paid by the university, varying according to whether the appointment is 9-month or 11-month. Most require some degree of prior or after-the-fact disclosure (see table). Consulting that reaches $10,000 a year in value to the faculty member is subject to additional disclosure under NSF/PHS conflict of interest guidelines.

Comparison with Idaho

The policies of the Idaho institutions are in the benchmark mainstream.

State/benchmark campus	Prior approval	After-the-fact reporting	Comment
California/UCSD			• No consulting by students for companies in which their advisors have significant interest. • Enforcement of conflict of commitment policy through tenure and promotion considerations.
Kansas/Wichita State	Yes	Yes	• Exception to prior consent for 24-hour engagements.
Montana/Montana State-Bozeman		Yes	• Annual report does not require information on level of compensation unless conflict disclosure guidelines are triggered. • Annual report considered a positive measure of connectivity with industry.
Nevada/UNR			• Policy avoids detailed rules provided duty of commitment and loyalty to university not violated.
Oregon/Portland State	Yes		• Policy emphasizes avoidance of conflict of interest or use of university facilities.

State/benchmark campus	Prior approval	After-the-fact reporting	Comment
Texas/UT-Austin	Yes		• Policy says consulting "should not be discouraged" and emphasizes compliance with ethics and conflict standards.
Utah/Utah State	Yes		• Policy requires advance permission for "consulting service leave."
Washington/Washington State		Yes	• Policy authorizes "worth-while" outside activity that does not involve conflict of interest or interfere with duties.
Wyoming/University of Wyoming	Yes		• Each unit may set its own standards. Policy defines conflict of commitment as interference with workload or redirection of primary loyalty.
Idaho/UI	Yes	Yes	• One day a week over the full-time, 40-hour commitment.
Idaho/ISU	Yes		•
Idaho/BSU		Yes	•

Observations on best practice

Some constituencies in the general public and state Legislatures may find it hard to accept that public-university faculty do any research at all during the school year, when they are seemingly paid for teaching, and to those with this view it may seem inconceivable that faculty are also permitted to take a day a week and perform personal consulting services for additional remuneration. Yet "fifth day consulting" is standard academic practice. Moreover, some of its strongest supporters can be found in a university's local industrial constituency. Industry uses consulting not to generate new discoveries, but for many other reasons, including assuring that its own research and development staff are up to date on the latest technologies, whether owned by the university in question or some other party elsewhere in the world.

It is also commonly accepted that consulting is one of the routes other than licensing by which technology makes the transition from university laboratory to marketplace (the other is placement of graduate students and postdocs). A sound consulting policy recognizes the connection of faculty consulting with the economic-development mission of the public university, while maintaining high standards on conflict of commitment and where applicable, disclosure of potential conflicts of interest. In Battelle's view, most consulting

approval or disclosure processes are now made redundant by conflict-of-interest management procedures, and after-the-fact reporting is with few exceptions never used by those who request it. UCSD's policy of letting the tenure and promotions committee police conflicts of commitment simply by reviewing the output of high-quality scholarship seems a fairly enlightened one.

SPIN-OUT/CONFLICT ISSUES

Models used in the benchmark set

Establishment of NSF/PHS guidelines on conflict of interest disclosure and management have greatly reduced the inter-campus variability in institutional policy on conflict management. Since 1995 each university receiving federal funds must maintain an infrastructure (forms, procedures) etc. for disclosure and one or more committees for review of disclosures and management of potential conflict. However, there is difference in the philosophy underlying the management of conflict. Many institutions do not go beyond advising that disclosable "significant interests" raise issues that must be monitored. Some add their own set of specific concerns.

Comparison with Idaho

Conflict policy at the Idaho institutions is in the mainstream of the benchmark set, with no particular focus on spin-off formation. All three indicated an interest in improving faculty understanding of these issues.

State/benchmark campus	General principles of conflict avoidance	Special issues pertaining to faculty role in spin-offs
California/UCSD	• Appropriate character of research. • No misuse of state resources. • No exploitation of students.	• In general faculty may not take lines roles in spin-offs if they want to accept R&D back. • High equity interests are rolled back to the disclosure threshold over time. • University may not negotiate IP rights with its own faculty in their role at spin-offs.
Iowa/Iowa State		• Consulting, equity ownership, and management roles in spin-outs all subject to scrutiny. • Has encountered difficulty with SBIR/STTR programs.
Kansas/Wichita State	• Avoiding use of university resources on external projects. • Coercing student involvement.	

Montana/Montana State-Bozeman		• Law requires disclosure of equity interests to Regents.
		• Policy contemplates approval of no more than two or three of:
		  ○ Consulting
		  ○ Founder
		  ○ Recipient of funding
		  ○ Service on board or line management role.

Nevada/UNR	• "Nothing we cannot do if equity holders' interests are protected," meaning the public, the institution, and the students.	• University may not negotiate IP rights with its own faculty in their role at spin-offs. • Law authorizes university to manage its own conflicts of interest.
Oregon/Portland State	• No distortion of academic programs. • No compromise of intellectual freedom or rights. • No line management except under extraordinary circumstances.	• Financial interest will not affect conduct of research or tech transfer. • Consulting for a research sponsor is not desirable. • Appropriate activity; open environment. • Relations between senior and junior faculty or with students must not be compromised.
Texas/UT-Austin	• No bias in design, conduct, or reporting of research.	• Law authorizes equity holding and service on boards, subject to disclosure.
Utah/Utah State	• "Conflicts of interest are not necessarily unwarranted, unethical, or illegal." Rather it is failure to disclose, to cease disapproved activity, or to act unethically that must be avoided.	
Washington/ Washington State		• University may not negotiate IP rights with its own faculty in their role at spin-offs. • Prior approval required for ownership of substantial equity, holding line management role, or assuming "an important continuing role in the scientific or technical aspects" of a company.

State/benchmark campus	General principles of conflict avoidance	Special issues pertaining to faculty role in spin-offs
Wyoming/University of Wyoming	• Special warning on potential for conflict between IP provisions of faculty consulting agreements and university work.	• University may not negotiate IP rights with its own faculty in their role at spin-offs.
Idaho/UI		
Idaho/ISU		
Idaho/BSU	• Policy currently recaps Title 59 chapter 7 of Idaho Code (ethics act)	

Observations on best practice

Best practice in conflict management rests not in the disclosure procedure or thresholds but in the cultural expectations that accompany the program. Procedures that flatly forbid certain activities and thus try and "force conflict underground," to quote the Business-Higher Education Forum white paper cited above, are nearly always doomed to failure. Policies work best instead when they acknowledge, as Utah State does, that potential conflict is not bad in and of itself, but only if one fails to acknowledge it and manage it in an open and straightforward way. At the same time, conflict policy should promote entrepreneurial behavior by faculty, provided that conflicts do not interfere with the educational or research mission of the university. As the director of the UCSD program told Battelle, "It's not a bad idea for faculty to get rich as a result of their research, but not at the expense of innocent people." This requires conflict-management to be viewed not simply as a compliance issue but as an integral part of a vision and strategy for commercialization of IP through spin-off formation.

The Business Higher Education Forum endorses several conflict management strategies that are actually identified in NSF/PHS guidelines:

- Divesting troublesome significant financial interests;
- Ending consulting arrangements that are structurally conflicted;
- Withdrawing the researcher from the project on which he/she is conflicted;
- Designating another researcher to oversee the project;
- Monitoring the project by independent reviewers; and
- Disclosing significant financial interests in any published report on the research.

BENCHMARKS/BEST PRACTICES

The following table identifies all benchmarks or best practices mentioned by interviewees. In general, public universities try to look to their peers, albeit those somewhat farther ahead in development. However, they are not averse to looking at private-sector models like Stanford or MIT, particularly on issues where issues of law or governance are not central, such as management of conflict of interest. The very largest and most successful programs do not do a lot of benchmarking.

State/Campus benchmark	Benchmarks or best practices in IP cited by state	Benchmarks or best practices in IP cited by campus
California/UCSD	N/A	• None
Iowa/Iowa State	None	• AUTM leaders: Yale, Harvard, MIT, and Wisconsin.
Kansas/Wichita State	None	• Universities its own size and lager ones like Missouri, Arizona, Texas, and MIT.
Montana/Montana State-Bozeman	Arizona, Texas, and Ohio for conflicts of interest policy.	• AUTM leaders, and others like North Dakota State that share commodity group relations.
Nevada/UNR	N/A	• None
Oregon/Portland State	None	• Peers at Council on Research Policy and Graduate Education and Council of Graduate Schools. • Indiana, UMass-Boston, and University of Missouri at KC. • Universities with blockbuster patents: Wisconsin, Florida.
Texas/UT-Austin	None	• None, except looking at models for university-affiliated seed-venture investment funds like NC State Academy Centennial.
Utah/Utah State	None	• NC State, University of Utah, Georgia Tech, and MIT.
Washington/Washington State	N/A	• AUTM leaders: Harvard, MIT, Berkeley, Florida, and University of Washington.
Wyoming/University of Wyoming	N/A	• On IP issues, public universities like Ohio and Indiana. • On conflict issues, private institutions like Stanford and MIT.

SELF-ASSESSED ISSUES

The following table summarizes strengths and weaknesses identified by interviewees in their own systems.

State/Benchmark campus	Self-identified strengths	Self-identified weaknesses/ other issues
California/UCSD	• Emphasis on maximizing economic impact of IP portfolio, not licensing revenue.	• Licensing is not the primary mission and even if it raised $100 million a year, that would still be secondary to smaller peer-reviewed research awards in terms of faculty attention/approval.
Iowa/Iowa State	• Organized system that works and has become "way of life" among faculty members.	• Inability to attract and retain qualified IP professionals under university salary structure.
Kansas/Wichita State		• Not enough experience yet "to know what we have left out."
Montana/Montana State-Bozeman	• Well thought out and functional for institutional and faculty interests.	• State: not enough cohesion in practice between Montana State and Montana. • Campus: Continued ambiguity on software copyright because university could lose more than it gains by pressing the issue.
Nevada/UNR		• Still new and not funded at level required. First priority to stimulate opportunity, not create enforcement vehicle.
Oregon/Portland State	• State: centralization of authority gives single point of contact. • Campus: technology transfer council of institutions a great help.	• State: centralization means that process can take more time. • Campus: unionized faculty environment makes it difficult to advance change.

State/Benchmark campus	Self-identified strengths	Self-identified weaknesses/ other issues
Texas/UT-Austin	• System: the office has existed for a long time and reached many faculty with a consistent message of service, not barriers. • Campus: office succeeds to extent it is not the IP "police" and plays a service role, but this means if it is expected to be self-supporting it may never grow.	• System: however, success is a cultural issue determined campus by campus. If approval of conflict-management programs were delegated to campuses, that might help those who have not yet become active. Anticipate continued toughening of conflict standards. • Campus: relationship with system works well only because there are good people in the roles who are lawyers who have learned to say yes. The relationship has the potential to be obstructive. • Campus: 50% royalty rate is too high and should be reduced in favor of returns to departments, creating buy-in. • Campus: office needs a way to do seed funding of start-up ventures.
Utah/Utah State	• Has done a good job protecting and patenting of IP.	• Not so good a job on interaction with external capital markets for spin-offs.
Washington/Washington State		• Campus has no major IP successes as role models, so convincing faculty that tech transfer is rewarding and protective of research is a priority.
Wyoming/University of Wyoming	• Got ahead of the curve on web-based instructional materials. Trying hard to be entrepreneurial.	• Fell behind on modern strategies for managing conflict of interest.

CORRELATION OF POLICY AND PROCEDURE WITH PERFORMANCE

It is not possible to correlate success on the AUTM measures highlighted in the previous section with any particular combination of state and institutional arrangements on IP. However, the overall success rates of Iowa State, Utah State, and the Cal system suggest an important role for expectations of entrepreneurship. The relatively low success rate of UT-Austin, which has a high academic reputation, suggests that size and sophistication in research matters does not always lead to success in IP management.

CONCLUDING OBSERVATIONS

- Existing IP policy and procedure at Idaho's research institutions seem generally consistent with mainstream academic practice in the benchmark set. This is so both for aspects of IP policy where there is wide variation among particular settings, and those where practice is fairly uniform across the nation. No single academic institution in the set stands out as a specific model to emulate, although elements of accepted best practice can be found in several of the benchmarks surveyed.
- Existing policies at UI, ISU and BSU ought not prevent them from attracting highly qualified faculty who are *also* inclined to collaborate with regional industry sponsors and to assist in the creation of Idaho-based start-up companies. The Idaho institutions seem eager to continue the refinement of their policies and the education of their faculty in how to balance various complex obligations. The institutions are anxiously awaiting completion of an updated umbrella policy by the State Board of Education, so they may continue to develop their respective campus-level approaches.
- Revision of policy gives the Board an opportunity, above all, to clearly articulate the outcomes it desires. Experience from the benchmark set clearly shows that a top-level "cultural" commitment to entrepreneurial management of university-owned IP can often be more important to success than the specific provisions of IP policy. The Board has an opportunity to give its institutions the confidence they need to set a tone on campus that allows each institution to play its role in contributing to Idaho's economic growth.

Appendix 1—Institutional Profiles

CALIFORNIA—UNIVERSITY OF CALIFORNIA AT SAN DIEGO

Organization

California has a governance system unlike Idaho's. There exist several distinct public university systems, each with a multicampus scope and its own system board, and the only state-level agency is a non-governing coordinating board.[30] For the purposes of this project, Battelle has taken the University of California *system* as if it were a state-governing agency, although it is not. However, Battelle was not able to arrange an interview at the system level. At University of California-San Diego (selected as a best practice because of its interaction with the electronics sector) Battelle interviewed the director of the Technology Transfer & Intellectual Property Services (TTIPS) office.[31]

Division of policy responsibility

Systemwide patent policy is governed by the UC Office of the President (UCOP).[32] Separate policies exist for copyright,[33] holding of equity,[34] and industrially sponsored research.[35] The only variation to UCOP IP policy at the campus level pertains to distribution of the portion of royalties set aside for research activities at the campus.[36]

Conflict-of-interest policy exists at multiple levels. UC is subject to the highly complex and multifaceted Political Reform Act of 1974[37], which requires it to adopt a conflict of interest code. UC's code is modeled on a standard code maintained by the state Fair Political Practices Commission.[38] The UCOP also has specific governing policies on conflicts as related to sponsored projects[39] and to licensing.[40] At the campus level, the UCSD

---

[30] Education Commission of the States. *State Postsecondary Education Structures Sourcebook, 1997.* Denver, 1997.
[31] Interview with Dr. Alan Paau, Nov. 6, 2001.
[32] University of California. Office of the President. Patent Policy. 1997. Available at: http://www.ucop.edu/ott/patentpolicy/patentpo.html.
[33] --. Policy on Copyright Ownership. 1992. Available at: http://invent.ucsd.edu/policies/uc_copyirght_pol.html.
[34] --. Equity Policy. 1996. Available at: http://ucop.edu/ott/equi-pol.htm.
[35] --. Guidelines on University-Industry Relations. 1989. Available at: http://www.ucop.edu/ott/unindrel.html.
[36] University of California at San Diego. Office of the Chancellor. Distribution of Invention Net Royalties for Research Support under Patent Policy. 1999. Available at: http://invent.ucsd.edu/policies/guid_net_royalties.html.
[37] Summary available at: http://www.fppc.ca.gov/index.html?ID=51.
[38] UC's version of the code text may be found at http://invent.ucsd.edu/policies/conflict_interest.html.
[39] UCOP. Policy on Disclosure of Financial Interests and Management of Conflicts of Interest Related to Sponsored Projects. Revised 1997. Available at: http://www.ucop.edu/research/disclosure.

Policy and Procedures Manual includes extensive guidance on conflict.[41] Disclosures consistent with NSF/PHS guidelines and the Reform Act are managed through the Office of Contract and Grant Administration and an Independent Substantive Review Committee.

Policy on faculty consulting is governed at the system level by a brief "standing order" of the Regents that bans outside compensation except in accordance with regulations established by the President and by a recently approved implementation university policy.[42] In practical terms, consulting relations are common and are governed by policy developed at the campus level. At UCSD this function is performed by the Office of Graduate Studies and Research.[43]

Division of operating responsibility

According to a history published by the UCOP Office of Technology Transfer as part of a review of centralization/decentralization tradeoffs,[44] certain employees on sponsored research projects have been required to disclose inventions since 1926. The university adopted mandatory disclosure in 1963 for all employees or researchers using university funds or facilities. A Board of Patents reporting to the Regents was created in 1973 to oversee policy. An administrative Patent, Trademark and Copyright Office was formed in 1979, reporting to the Regents as Advised by the Board of Patents.

Responsibility for this office was transferred to the Office of the President in 1985. In 1989 the campuses and laboratories managed by UC were given the option of selecting either full service by PTCO, quasi-independent liaison status, or independent offices. The name of the office was changed to the Office of Technology Transfer (OTT) in 1991, reflecting a deliberate exclusion of copyright and trademark from the centralized domain. Since that time, the offices at both the larger campuses and the DOE laboratories managed by UC have moved farther toward complete independence. Smaller campuses like Santa Barbara and Santa Cruz rely on OTT for management of their programs. OTT maintains overall responsibility for assuring that UCOP systemwide patent policy is being faithfully followed by all campus offices.

The UC TTIPS office is an independent office with signatory authority, reporting to the same UCSD Vice Chancellor as the Office of Grant and Contract Administration. (TTIPS consults on IP provisions of industry-sponsored research). However, TTIPS also works closely with General Counsel at the UCOP OTT. Although not required to self-fund, the

---

[40] --. Guidelines on Managing Potential Conflicts of Interest in Licensing. 2001. Available at: http://patron.ucop.edu/ottmemos/docs/ott01-02b.html.

[41] University of California at San Diego. Policy and Procedures Manual Section 200. Available at: http://adminrecords.ucsd.edu/PPM/docs/200-13.html.

[42] University of California. General University Policy Regarding Academic Appointees: APM-025. Conflict of Commitment and Outside Activities of Faculty Members. Available at http://www.ucop.edu/acadadv/acadpers/apm/apm-025-07-01.pdf.

[43] --. Office of Graduate Studies and Research. Consulting for Industry. Available at: http://ogsr.edu/industry/consult.htm.

[44] University of California. Office of the President. Office of Technology Transfer. Ad Hoc Technology Transfer Advisory Report. March 8, 1994. Available at http://www.ucop.edu/ott/adhoc.html.

TTIPS has actually run surpluses in recent years. All the campus directors meet three times a year to discuss common issues on policy, coordination, and the tensions inherent in the semi-decentralized system.

Synopsis of IP ownership policy

Scope of university's claim to IP	• All inventions created using university funds or resources; • Copyrightable works created under sponsored research; • Copyrightable works commissioned by the university; and • All copyrightable work within the scope of employment duties, other than those classes excepted (below).
Justification	• "…To encourage the practical application of University research for the broad public benefit." • "…Preventing the inappropriate use of public funds for private gain."
Exceptions	• Inventions resulting from permissible consulting activities; • Copyrightable scholarly or esthetic works, unless sponsored or contracted works or subject to special copyright agreement; • Copyrightable personal work outside scope of employment and not using university resources; and • Patent rights released to the inventor, subject to restrictions by the sponsor if any and a continued "shop license." • Special exemptions as authorized.
Obligation to disclose	• Uniform across inventions; and • Loosely enforced in software copyrights. Faculty is encouraged to place UC copyright notices on all software. If an outside entity expresses interest in licensing, discussions on protection and ownership begin.

Royalty distribution policy

UC policy on distribution of revenue from patent licenses is as follows:

- Costs are deducted from gross royalties;
- 35 percent of net royalties to the inventor;
- 15 percent to research-related purposes on the inventor's campus; and
- The remaining percentage to the University.

At UCSD, the 15 percent campus share is allocated: 60 percent to the inventor's laboratory and 40 per cent to the inventor's academic unit, which inherits the inventor's laboratory's share should the inventor leave UCSD. In the telecom sector, where "stacked royalties" on multiple system components may make certain products uneconomical, UCSD TTIPS is willing to take its compensation in one-time or annual fees rather than unit royalties.

Control over distribution of copyright revenues is exclusively the responsibility of the TTIPS and other campus-level offices. OTT has no role in management of these licenses whatever.

Institutional equity holding

The TTIPS director notes that UCSD has a "higher propensity" to take equity than other campuses such as Berkeley, because the campus has embraced a regional economic-development mission and wants "to grow technology companies" rather than emphasizing royalties and fees. The Director notes that UCSD manages its intellectual capital "to maximize impact, not necessarily revenue," but that other campuses like Berkeley may prefer cash, especially when start-up companies have been well capitalized by the Bay Area venture capital community. As the UCSD program matures, it may shift emphasis toward support of existing industry clusters rather than spin-out formation.

Under systemwide policy, UC may choose to hold equity in lieu of certain fees, but will limit its holdings to 10 percent and exercise no voting representation on a spin-outs board. The UC inventor may optionally choose either:

- To receive directly 35 percent of shares received by the university, in which case no costs are deducted; or
- To have all shares held by the Office of the Treasurer, which manages them "based upon sound judgment and publicly available information," and to receive the inventor's share in cash or equity as and when deemed appropriate by the Treasurer.

Any faculty member interested in continuing to take sponsored research funding from a spin-out is encouraged by TTIPS to take the latter route, under which conflicts are considered easier to manage.

Industrially sponsored research

UCOP policy on industry-sponsored research stresses the need for an open academic environment and freedom to publish. Policy allows a publication delay of 60 to 90 days to permit assessment of whether IP protection is required.

UC licensing policy[45] contemplates:

- First right to exclusive license to sponsors who pay all direct and indirect costs;
- First right to non-exclusive licenses to sponsors who pay less; and
- Equal consideration as a licensee to sponsors who pay only salary or stipend support of a fellowship or assistantship.

IP ownership is never assigned outright to industry sponsors because it is assumed that any work is at least partly subsidized by the taxpayers.

[45] UC Business and Finance Bulletin G-40. Available at: http://www.ucop.edu/ucophome/policies/bfb/g40c.html.

Consulting

UC policy states that faculty is "encouraged" to participate in appropriate outside professional activities that do not conflict with their primary obligation to university duties, subject to an annual report to the department chair. Policy allows up to 39 days to faculty members with nine-month appointments, and full-time during summer months unless university support is received, in which case the limit is one day a week. Full-year appointees may consult up to 48 days. Students and Postdocs may not consult for companies in which their advisors have a significant interest (as defined by conflict policy).

Startup/conflict issues

UC policy states that faculty "may not engage in any activity that places them in a conflict of interest between their official University activities and any outside interest or obligations." UCSD relies on a vigorous program of full disclosure aimed not at avoiding conflict but at successfully managing it. The prime concerns of campus leadership are ensuring: (1) appropriate "character" of sponsored research, (2) no misuse of state resources, and (3) no exploitation of students. The TTIPS Director notes, "It's not a bad idea for faculty to get rich as a result of their research, but not at the expense of innocent people."

Implementing policy pertinent to both consulting and spin-offs divides outside activities into three categories: (Category I) those "likely on their face to raise issues of conflict of commitment; (Category II) those unlikely to do so and "ordinarily accepted as regularly performed compensated outside professional activities"; and (Category III) those that are "integral to all disciplines and [that] ordinarily do not present issues of conflict of commitment." Included in Category I—for which prior approval is required[46]—is service in a line management role in any outside enterprise, including a spin-out. In general, faculty is not permitted to take line roles in a startup if they want to accept sponsored-research funding back into their laboratories. If no sponsored research is involved, approval may be granted. In practical terms, the campus relies on the tenure and promotions committee to enforce faculty members' required primary allegiance to the university.

If faculty members start out with high levels of equity ownership in a startup with which they wish to do research business (such as an SBIR company) the campus will place them on a conflict management plan that brings their ownership down to the 5 percent disclosure threshold within a specified period.

A separate policy focuses specifically on avoiding conflicts in making licensing decisions, on the part of either inventors or licensing officers. This policy is designed in part to prevent a faculty inventor negotiating with the university on behalf of a startup licensee, which would be a clear violation of the Reform act.

Benchmarks

No benchmarks were identified.

---

[46] Retrospective annual reports are required for both Category I and II.

Self-identified issues

The TTIPS Director is well aware that licensing revenue is not the primary mission of his office, and notes that even if he brought in $100 million annually, after required distributions that would not be a lot of discretionary money for the campus, and would not have as much impact on the academic mission as even a modest peer-reviewed NIH award carrying full indirect cost recovery. Therefore the emphasis of the office is on the maximizing the impact of the IP portfolio. At present this is a regional thrust but is shifting to a set of "global impact" goals.

IOWA—IOWA STATE UNIVERSITY

Benchmark organization

The State Board of Regents is the governing body for all three public senior higher education in the State of Iowa.[47] At the state agency level, Battelle jointly interviewed the Director and Associate Director of Legal Affairs for the Board.[48] At Iowa State University (a benchmark for the University of Idaho), Battelle jointly interviewed the Vice Provost for Academic Affairs and Research and the Director of the Office of Intellectual Property and Technology Transfer (OIPTT).[49]

Division of policy responsibility

In Iowa there is no IP policy at the Regents level, by convention and past practice, but the Regents must approve the specific policies of each institution. Since state courts have recently ruled that university policies not publicly noticed and approved cannot be enforced, it is possible that institutional policies may need to be reapproved by the Board under more rigorous conditions, or even moved into state regulation. There is state law governing conflicts of interest in public institutions, but it focuses mainly on routine contracting and obligations to avoid nepotism, and Iowa State claims exemption in any case based on a long-ago action of the Regents.

Iowa State University has had an IP policy for many years, most recently approved by the state Board in 1982,[50] and a policy on university-sponsored educational materials approved in 1976, as an outgrowth of increased development of courseware that was at that time in video format.[51] A separate conflict of interest and consulting policy can be found in the university's Professional and Scientific Handbook.[52]

Division of operating responsibility

IP management is done by the OIPTT, in the reporting line of the Vice Provost for Academic Affairs and Research. The Vice Provost also handles conflict-of-interest disclosure and management.

The OIPTT is described as "nearly self-supporting." Since 1938, Iowa State has had an affiliated Research Foundation, which accepts assignment of IP from the university and acts as its licensing agent in coordination with OIPTT. In the most recent fiscal year,[53]

---

[47] *Postsecondary Education Structures Sourcebook,* supra. A separate board governs community colleges.
[48] Interview with Charles Wright and Marcia Bronson, October 10, 2001.
[49] Interview with Dr. James Bloedel and Dr. Kenneth Kirkland, October 8, 2001.
[50] Iowa State University. "Statement of Patent Policy." Approved by State Board of Regents 1969 and amended in 1982. Available at: http://www.iastate.edu/~isurf/policy/patentpolicy.html.
[51] --. Policy Statement of Iowa State University Concerning University-Sponsored Educational Materials. Available at: http://www.iastate.edu/~isurf/policy/EducationalMaterialsPolicy.html.
[52] --. Professional and Scientific Handbook. Available at http://www.public.iastate.edu/~hrs_info/ClassComp/pro_sci_handbook.html.
[53] Iowa State University Research Foundation Annual Report. Provided to Battelle.

the Iowa State University Research Foundation returned $2.4 million to the campus in endowment-funded research grants, royalty sharing, and other income. This included a $391,000 grant to nearly fully support the cost of the OIPTT (the university contributes $179,000 in budgeted funds); a $500,000 grant to support research, and a $200,000 pool for commercialization research.

Synopsis of IP ownership policy

Scope of university's claim to IP*	• All inventions arising out of activities of its faculty or staff when University facilities or resources have been utilized; • Copyrightable educational materials that are "university sponsored" in the sense there is a "substantial contribution" of university resources to their production; and • Trademarks.
Justification	• The policy cites federal requirements, but also notes that the university reserves similar rights where non-federal sources of support have been utilized. • So that "obligations to the public and to granting or supporting agencies will be met."
Exceptions	• "Traditional textbooks" that do not use substantial resources over and above usual office and library services; • Inventions not utilizing any resources of the university (e.g., in a consulting engagement or at home); and • Formal release of the technology to the inventor, subject to federal rules.
Obligation to disclose	• Uniform in the claimed scope. (Note: The transmittal sheet for any sponsored research agreement includes a statement which the faculty member must initial reminding him or her of the obligation to assign resulting IP to the university.)

* The transmittal sheet for any sponsored research agreement includes a statement which the faculty member must initial reminding him or her of the obligation to assign resulting IP to the university.

Distribution of royalties[54]

At Iowa State the royalty distribution is a follows:

- Expenses are deducted from gross royalties;
- 15 percent administrative fee on gross royalties to the Research Foundation;
- 1/3 of net to inventor(s);
- 1/3 to college or equivalent unit; and
- 1/3 retained by the Research Foundation for investment or return to University for other research purposes.

In the case of university-sponsored educational materials, no extra compensation is offered if used internally, and negotiated compensation if used externally.

Institutional equity holding

At present the Research Foundation will not accept equity in lieu of cash royalties, although the new university president is considered more open to that possibility in the future.

Industrially sponsored research

The Vice Provost's Office includes an industry liaison that will expedite industry-sponsored research. The university is prepared to delay publication of sensitive results by up 90 days to permit comments on IP protection. The OPITT becomes involved in sponsored research agreements as a resource when IP issues are involved. The Vice Provost noted that tensions might arise when the university cannot approve a grant because the sponsor's demands are "extravagant." In many cases, though, the office is successful at negotiating as solution.

Consulting

University policy contemplates that employees may be asked to consult and that this is their decision based on the nature of their responsibility and whether their professional skills and the university's standing are enhanced by the engagement. To avoid conflicts of commitment to regular university duties, consulting is constrained to a day a month. Some faculty are offered the option to go three-quarters time, but with no guarantee that they can come back full-time. Faculty members must disclose all consulting annually through their department to the dean and the vice president or provost. Disclosure does not include income unless covered by conflict of interest guidelines.

---

[54] Iowa State University. Iowa State University Research Foundation. "ISURF Patent Royalty Distribution Policy." Effective dates of various clauses 1991, 1992, and 2000. Available at: http://www.iastate.edu/~isurf/policy/PatentRoyaltyDist2.html.

Spin-off/conflict issues

University policy emphasizes disclosure of potential conflicts so that remedial steps can be identified, consistent with NSF/PHS policy. Potential areas of conflict for faculty identified by policy are consulting, equity ownership, and assumption of management roles in outside entities. None of these is forbidden outright, but in the case of equity ownership there is particular concern about accepting sponsored research from the company or employment of graduate students by the company.

Faculty is asked to declare potential conflicts either on sponsored-research transmittal sheets or to their department in the case of consulting. Management strategies may be devised at the departmental, college or university level. The Vice Provost's Office describes itself as "extremely proactive" in conflict management, maintaining "dozens and dozens" of conflict-management committees at any one time.

In general, entrepreneurial faculty have been accepting of the "tutoring" provided by the Vice Provost's office. The most difficult cases have been in federal programs like SBIR/STTR where company participation is a plus, and the partnering company has substantial ownership by a faculty member.

Benchmarks

For best practices, Iowa State looks at a mixture of public and private institutions identified by AUTM: Yale, Harvard, MIT, and Wisconsin.

Self-identified issues

Iowa State considers its strength in IP management to be an organized system that works, has become "a way of life" among faculty, is proactive, and receives strong support from the administration. The principal weakness that Iowa State sees in its own setup is an inability to keep qualified IP professionals, since salaries at the Research Foundation are tied to university grades.

KANSAS—WICHITA STATE UNIVERSITY

Organization

The State Board of Regents is the governing body for all six public universities in Kansas and a series of technical colleges.[55] At the state agency level, Battelle interviewed the General Counsel to the Board.[56] At Wichita State University (the benchmark campus for Idaho State University), Battelle interviewed the Associate Vice President for Research,[57] who operates the Office of Research Administration and serves as campus patent officer.

Division of policy responsibility

The Board of Regents maintains in its Policy Manual a general "outline" of intellectual property policy[58] but allows considerable latitude to the individual universities in implementing specific operating procedures. "As a matter of history and culture," Battelle was told, the Board does not deal with IP issues at a detailed level.

As in Idaho, Board Policy represents a level of formality somewhat below state regulation. However, to accommodate its new mandate to coordinate the community colleges (which does not include statutory authority to set policy), the Board may re-adopt its entire policy manual and place it in regulation, according to the General Counsel.

At Wichita State, the campus-level policy[59] is quite similar to the Regents' outline. The campus also maintains policies on conflict of interest[60] and conflict of commitment.[61]

Division of operating responsibility

IP management and conflict-of-interest management at Wichita State are both done by the Office of Research Administration in the reporting line of the Vice Provost for Academic Affairs and Research. Regent's policy permits assignment of the institution's rights to an outside organization such as a research foundation or other patent-management entity. At Wichita State, this role is usually played by the Wichita Technology Corporation,[62] one of a network of public/private commercialization centers supported by the Kansas Technology Enterprise Corporation,[63] or else by the Research Cor-

---

[55] *Postsecondary Education Structures Sourcebook,* supra. Community colleges have their own boards subject to coordination (but not policy-setting) by the Board of Regents.
[56] Interview with Mary Prewitt, Esq., October 12, 2001.
[57] Interview with Dr. Gerald Loper, November 5, 2001.
[58] Kansas Board of Regents. Intellectual Property Policy Outline. Approved 1998. Available at http://www.kansasregents.org/educators/policies/intell_prop/intel.html.
[59] Wichita State University. Policies & Procedures Manual. Section 9.10. Available at http://webs.wichita.edu/inaudit/ch9_10.htm. See also sections 9.11 and 9.12 for implementation.
[60] --. Section 9.15. Available at http://webs.wichita.edu/inaudit/ch9_15.htm.
[61] -- Section 5.15. Available at http://webs.wichita.edu/inaudit/ch5_15.htm.
[62] See http://www.wichitatechnology.com/
[63] State Science and Technology Institute. *Kansas Commercialization Corporations.* Columbus, Ohio: SSTI, 1998. Available at http://www.ssti.org/Publications/KSCOM98.PDF.

poration or some similar outside patent manager. Conflict of interest disclosures consistent with NSF/PHS policies are managed by the Office of Research Administration.

Synopsis of IP ownership policy

Scope of university's claim to IP	• Inventions resulting from university sponsored research; • Copyrightable software resulting from university-sponsored research with projected market value in excess of $10,000 annually; • Other copyrightable works for hire and those that make "substantial use" of institutional resources; • Mediated courseware that is "institution directed"; and • Trademarks.
Justification	• "…The Board has a fiduciary responsibility for the appropriate use of state funds" involved in production of IP.
Exceptions	• Scholarly and artistic works; • Mediated courseware that is faculty-initiated, which remains property of the creator but may be used on campus without extra compensation; • Inventions determined not to be work for hire and not to have used significant university resources (statement to that effect is provided within 30 days); • Inventions or software relinquished or assigned to the inventor; and • Inventions assigned by negotiated contract to a sponsor that has paid all fully loaded costs.
Obligation to disclose	• Uniform across the claimed scope.

Royalty distribution

The royalty distribution policy as applied at Wichita State is as follows:

- Expenses are deducted from gross royalties;
- The Regents require at least 25 percent of net royalties to the inventor, but Wichita State has adopted 50 percent to the inventor; and
- The remaining 50 percent to the university to sponsor further research, although the university may allow a patent-management entity to retain a portion.

The faculty share of royalties was recently raised to 50 percent in anticipation of an increased flow of disclosures. It is too early to judge whether this has been a successful strategy.

Institutional equity holding

There is no policy on institutional holding of equity in lieu of cash royalties, and there has been only one such case to date.

Industrially sponsored research

Wichita State interacts extensively with the aerospace industry and maintains a university/industry research consortium. Through this mechanism the campus has gained experience signing sponsored-research agreements with provisions for 60-day delay of publication to allow sponsor review of IP implications.

More generally, the university has a "thesis and dissertation sequestration" policy[64] that allows the Dean of the Graduate school to prohibit publication for one year to allow for IP review. This sequestration must be requested either by the student, the dissertation director, or by the patent officer, and must take into account the implications for the student's future scholarly work (although sequestration does not interfere with completion of degree requirements). Sequestration may be extended for a second year.

The university is allowed to assign IP to an industry sponsor willing to pay fully loaded costs, but this has never occurred during the tenure of the Associate Vice President.

Consulting

Consulting is encouraged provided that it furthers professional development and does not pose a conflict of commitment. The business school operates on the rule of thumb of one day a week. The issue has not been a major concern in either the sciences or engineering, where many industrial projects are taken into the university through the sponsored-research route. Prior consent for consulting is required except for single-occasion 24-hour activities. Annual reporting of time spent is required in all cases.

Spin-off/conflict issues

The Wichita State conflict of interest policy stresses that conflicts of interest are not unusual and may arise from commercialization of research. It places particular stress on avoiding use of university resources on "external" projects or coercing student involvement. Reports consistent with NSF/PHS guidelines are submitted to department chair and forwarded first to the dean and then to a university Conflict of Interest Review Committee for identification of actual or potential conflicts. This committee has power to recommend conditions or restrictions to manage, reduce or eliminate the potential conflict. The university is considering adopting a policy to encourage entrepreneurial leave as a way of mitigating potential conflicts.

Benchmarks

For its IP benchmarks, Wichita State looks to a series of public and private institutions, including both universities its own size and scope, and larger universities like Missouri, Arizona, or Texas, and private institutions like MIT.

---

[64] Section 2.13 of the Wichita State Policies and Procedures Manual. Effective 2001. Available at: http://webs.wichita.edu/inaudit/ch2_13.htm.

Self-identified issues

Wichita State does not yet have enough experience "to know what we have left out," Battelle was told. It has considerable experience with "technology transfer" in the sense of working collaboratively with industry, but little in commercialization.

MONTANA—MONTANA STATE UNIVERSITY (BOZEMAN)

Organization

The Board of Regents of Higher Education functions as the constitutional governing agency for the Montana University System.[65] At the state agency level, Battelle interviewed the Commissioner of Higher Education, the chief executive of the Board.[66] At Montana State University at Bozeman (a benchmark for the University of Idaho), Battelle interviewed the Director of the Office of Intellectual Property Administration and Technology Transfer (IPATNT, pronounced "I Patent-it").[67]

Division of policy responsibility

The Board of Regents has had an umbrella IP policy since about 1980[68] and more recently added provisions pertaining to copyright[69] and electronic courseware.[70] Current conflict of interest policy[71] may be revised.

Montana State University has no separate written policies and crafts its practices to be generally consistent with Board policy, although there is some acknowledged variation with procedure at the University of Montana.

Division of operating responsibility

IP management at Montana State-Bozeman is handled by the IPATNT unit, in the reporting line of the Vice President for Research, Creative Activities, and Technology Transfer. IPATNT also handles disclosure and management of conflicts of interest consistent with NSF/PHS rules. In addition, due to constitutional prohibition on equity holding directly by a state agency, the university has since 1980 housed an affiliated foundation known as the Research Development Institute (RDI). RDI acts as the university's general patent and licensing agent and may hold equity interests. It is independent legally but staffed in an overlapping fashion with IPATNT. IPATNT handles disclosures and initial evaluation, and the RDI handles final decisions on patenting and all licensing.

A recently passed amendment to state ethics law[72] permits faculty to share in equity ownership held by institutions in lieu of cash royalty, but requires approval of such arrange-

---

[65] *Postsecondary Education Structures Sourcebook,* supra. There are two senior institutions, University of Montana and Montana State, now both incorporating several distinct campuses of previously separate universities and schools.
[66] Interview with Dr. Richard A. Crofts, October 8, 2001.
[67] Interview with Rebecca Mahurin, October 9, 2001.
[68] Montana Board of Regents of Higher Education. Policy 401.2. Available at http://www.montana.edu/wochelp/borpol/bor400/4012.htm.
[69] --. Policy 401.3. Available at: http://www.montana.edu/wochelp/borpol/bor400/4013.htm.
[70] --. Policy 406. Available at http://www.montana.edu/wochelp/borpol/bor400/406.htm.
[71] --. Policy 770. Available at: http://www.montana.edu/wochelp/borpol/bor700/770.htm.
[72] Montana Code Annotated 20-25-109**.** Available at http://data.opi.state.mt.us/bills/mca/20/25/20-25-109.htm.

ments at the Board of Regents level. The Commissioner acknowledges that Montana's two universities would probably have preferred local control, but that centralized approval was judged necessary to building the Legislative confidence required to get the equity provision passed.

Montana is also one of several states that also are highly sensitive to avoiding competition by the public university system with private, for-profit enterprises. A separate policy[73] outlines a framework for ensuring that earned-income activities are consistent with "published and approved missions."

Synopsis of IP ownership policy

Scope of university's claim to IP	• Patentable inventions made in connection with assigned duties and/or by use of the system's facilities; • Copyrightable work for hire; and • All electronic course materials produced in connection with assigned duties or by use of the system's facilities, regardless of whether written for hire or through a grant.
Justification	• "…Inventions are often the by-products of research, and…it may be in the public interest that the System provide the protection and control available under patent laws."
Exceptions	• "Under all other circumstances" than the scope defined above, individual inventors may seek their own patent protection; • Copyrightable works other than those defined above, provided the campus is reimbursed for fair-market value of use of facilities other than normal academic environment; • Inventions declined and returned by assignment or by lapse of three year's time from assignment without commercialization (unless return is precluded by sponsor); • Copyrights that are declined and rights in electronic course material that are declined; • Manuscripts or works of art for publication in media where no remuneration is given the author; and • Variation by contract from the courseware policy.
Obligation to disclose	• Uniform across the claimed scope. Software if potentially patentable.

[73] Montana Board of Regents of Higher Education. Policy 1909. Available at http://www.montana.edu/wochelp/borpol/bor1900/1909.htm.

Royalty distribution

Distribution policies of the Board of Regents as implemented at Montana State University are as follows:

- A 30 percent fee is deducted from gross royalties to pay the administrative expenses of IPATNT (fee was 10 percent for some time).
- Direct patent costs are deducted from gross royalties.
- 50 percent of net income is distributed to the inventor.
- 50 percent to the university, of which the following share is dedicated to the laboratory of the inventor:
    - Two-thirds of the first $30,000 per year;
    - Half the next $30,000 per year; and
    - One-third of the remainder.
- The balance of the university share is for general research at the university, but may be used to pay patent-filing costs of IPATNT not covered by its administrative fee.

The campus has found that the 50 percent inventor's share is helpful in faculty recruiting. In the case of electronic course materials that are not written for hire, although the university asserts ownership, it will not use the material outside the university without written consent and is willing to divide royalty income 50-50.

Institutional equity holding

Equity in spin-outs obtained by RDI in lieu of cash royalties is distributed to inventors immediately upon receipt. The IPATNT director sees advantages to this policy in helping the university avoid allegations that it has insider knowledge regarding publicly traded securities, although she believes it also opens up other problems in conflict of interest.

Industrially sponsored research

The university offers its sponsors a standard publication delay of 30 to 60 days to assess IP protection issues. The IPATNT office reviews and co-signs all industry-sponsored research agreements for IP provisions.

Consulting

Faculty consulting is limited to one day a week, and an annual report is required on number of hours spent, as a measure of connectivity to industry. However, this report does not request information on the level of compensation received, unless otherwise disclosed for conflict purposes.

Spin-off/conflict issues

The Commissioner explains that the Board of Regents became interested in conflict issues as it became apparent that the opportunity to build new businesses in Montana would depend on versatility in creation of spin-off companies, rather than on licensing IP. The Board realized it was subject to traditional statutory language on ethics[74] that it read as interfering with the creation of spin-offs. The Board therefore sought and received a new section[75] that explicitly *allows* university system employees the following relationships with licensee companies:

- Holding of an equity interest, subject to Board of Regents approval;
- Service as a director, at the request of the university system; or
- Service as a director, officer or other employee, subject to Board of Regents approval.

A concomitant revision of Board policy is in planning, although this may be more relevant to the University of Montana where no foundation was ever created to hold equity. Current Board policy encompasses both conflict of interest and conflict of commitment, but provides only in very general terms for disclosure of potential conflicts and has no detailed provisions on equity.

Montana State University maintains a campus-based system for disclosing potential conflicts that is modeled on NSF/PHS requirements, and reminds faculty of this obligation on proposal clearance slips. IPATNT suggests that of the various ways a faculty member may interact with a spin-out (consulting, founder, recipient of sponsored research, director's or line position) only two or three will probably be allowed at once, but that determination will be made on a case-by-case basis. In general the campus expects that faculty will not have a line role, but offers an option for faculty to drop back to 0.5 FTE.

Benchmarks

Benchmarks used by the Montana Regents in researching the new conflict of interest law included Arizona, Texas and Ohio. The Commissioner observes that the university campuses tend to look at "expectation" or "escalation" peers that are ahead of where they are currently, whereas the Board tends to look at those that are currently in the same category or class. Compromise has resulted in a series of peer institutions for each campus that is used across the board for various purposes.

At Montana State, the IPATNT office looks for its benchmarks to strong performers identified by AUTM statistics and to public institutions like North Dakota State that share IP interactions with the same agricultural-commodity groups.

---

[74] Montana Code Annotated 2-2-101 et seq. Available at: http://data.opi.state.mt.us/bills/mca/2/2/2-2-101.htm.

[75] Montana Code Annotated 20-25-109**.** Available at http://data.opi.state.mt.us/bills/mca/20/25/20-25-109.htm.

Self-identified issues

The Commissioner regards the IP system as well thought out and functional for institutional and faculty interests, although he believes there is still not enough cohesion in practice between Montana State and the University of Montana. The IPATNT director at Montana State sees the main weakness as being continued ambiguity on software copyright that cannot be resolved because the university could lose more than it gained by pushing the issue before the faculty, which is unionized.

NEVADA—UNIVERSITY OF NEVADA-RENO

Organization

The Board of Regents of the University and Community College System of Nevada is the constitutional governing agency for all postsecondary public education in the state.[76] Battelle was unable to arrange a state-level interview and was told that no staff is assigned to the IP issue at the Board level other than review of licenses for liability issues by system general counsel. At the University of Nevada at Reno (a benchmark for UI), Battelle interviewed the director of the newly created Office of Technology Liaison (OTL).[77]

Division of policy responsibility

Intellectual property policy resides at the level of the Board of Regents.[78] However, an important item of context is that the Regents policy was originally crafted by the Vice President for Research at UNR. Campuses are responsible for detailed procedures, which are subject to review and approval by the Regents. The Board policy contemplates, for example, that campuses may adopt definitions of "significant resources" (see below) that are more rigorous than the fairly loose criteria of the system policy. UNR does not appear to have done so. Regent's conflict of interest policy[79] is oriented to purchasing issues.

Division of operating responsibility

IP management at UNR is done by the OTL, in the reporting line of the Vice President for Research. Licenses are reviewed by the system general counsel for liability. Like any contract, if their value exceeds a certain dollar level, they are executed by system Chancellor. Conflict of interest disclosures consistent with NSF/PHS rules are administered by the Office of Sponsored Projects Administration, also reporting to the Vice President for Research.

---

[76] *Postsecondary Education Structures Sourcebook,* supra.
[77] Interview with Dr. Richard Bjur, October 29, 2001.
[78] Board of Regents of the University and Community College System of Nevada. Title 4 Chapter 12. Available at: http://www.nevada.edu/board/handbook.htm.
[79] University of Nevada-Reno. University Policy on Conflict of Interest Pertaining to Sponsored Projects. Available at: http://www.unr.edu/ospa/COIPolicy.doc.

Synopsis of IP ownership policy

Scope of university's claim to IP	• Inventions by an employee as a result of their duties;
	• Inventions as a result of an agreement with an external research sponsor; and
	• Inventions developed using significant system resources.
	• Copyrightable works:
	  ○ Created for hire;
	  ○ Created by direct application of funds through the system in pursuit of a specific project; or
	  ○ Created with significant use of system or system-administered resources.

Justification	• "…To ensure utilization of…inventions for the public good and to expedite their development and marketing…the rights and privileges, as well as the incentive, of the inventor or author/creator must be preserved…"
Exceptions	• In general, no copyrights unless they fit the categories above (neither office, library, desktop computers, nor payment of salary from unrestricted accounts are considered "significant resources"); • Book or journal articles to disseminate research findings; • Literary or artistic works not institutionally commissioned; • Textbooks developed in conjunction with class teaching, unless developed at university direction; and • Any inventions or copyrightable works created (1) using only minimal unrestricted funds, (2) outside the assigned duties of the inventor or author/creator, (3) using minimal levels of significant resources, or only insignificant resources, or (4) developed on the personal, unpaid time of the inventor/author/creator. • A consequence of the copyright policy is no claim on courseware except as part of official duties.
Obligation to disclose	• Uniform across the claimed scope.

Royalty distribution

Royalty distribution policy of the Regents as implemented at UNR is as follows:

- Expenses are deducted from gross royalties;
- 60 percent of net income to the inventor(s)
- 25 percent of net income to the inventor's academic unit or department. At UNR this share is divided:
    - 10 percentage points to the school,
    - 15 percentage points to the department
- Remaining 15 percent of net income to the university, used at UNR for patent or general expenses of the OTL.

The OTL Director believes that the generous 60 percent distribution to inventors has led to increased disclosures, but he has not been "beating the bushes for disclosures" because he is concerned about raising expectations that are dashed by inability to process a backlog.

Institutional holding of equity

The state constitution prohibits direct equity ownership by the university system, but the UNR-affiliated philanthropic foundation has occasionally been used to hold equity shares. UNR is considering creating an affiliated special-purpose corporation to perform this function. However, its legal structure is still under study, as is the impact on royalty-distribution policy.

Industrially sponsored research

The right to publish is protected in all industry-sponsored research subject to delays of about 60 days to permit review and comment on IP issues. However, the more rigorous the degree of confidentiality demanded by the sponsor, the more disclosure the university insists on. Students involved in projects that are so tightly controlled that they amount to technical services rather than research are asked to sign a waiver saying they understand their work may not be applicable to academic requirements. In the end, many sponsors back off such demands, realizing that the project will not attract the brightest students or faculty. The university rules out few approaches, since it recognizes economic-development as a legitimate goal.

Consulting

UNR conflict policy states that the university "has no interest in setting forth detailed rules that may interfere with the employee's legitimate outside interests." The policy specifically deems permissible consulting provided that time commitment does not exceed university policy or alter loyalties to the university.

Spin-off/conflict issues

The OTL Director believes that many faculty who formerly were "working in a garage" can be convinced that if they work instead through sponsored research, they can have students and that the university is willing to help them manage conflicts of interest.

Legislation approved as of last July 1st clarified that presidents of the Nevada universities have discretion to manage potential conflicts in the public interest, where that term is construed to include economic development. The UNR policy defines conflict of interest as using influence or authority within the university to advance an employee's own personal or financial interests.

The Director recognizes that in startup situations companies will try to induce faculty and institutional cooperation by giving equity. The office's general approach is "there is nothing we cannot do, if equity holders' interests are protected." He identified key constituencies as the public at large; the institution itself; faculty; and students. The office stresses that faculty members involved in a spin-out cannot be part of the negotiation between that spin-out at the university.

Benchmarks

No benchmarks were noted.

Self-identified issues

The OTL Director observes that the UNR program is still very new and not funded at the level it requires. Its first priority is to stimulate opportunity rather than to create an enforcement vehicle. He feels strongly that if it were required to self-fund, it could become a "bottom line" operation and ignore its service function to faculty.

OREGON—PORTLAND STATE UNIVERSITY

Organization

The State Board of Higher Education and its associated Department govern the public postsecondary system of higher education in the state, known also as the Oregon University System.[80] At the state level, Battelle interviewed the Department's Director of Legal Services, who holds a cross-appointment as a Special Assistant Attorney General.[81] At Portland State University (a benchmark for Idaho State University), Battelle interviewed the Vice Provost for Research.[82]

Division of policy responsibility

The organic statute for the Department includes several quite-general provisions[83] on acquisition, ownership and disposition of IP by the System. More detailed policies are specified in a Departmental administrative regulation.[84] The final level of detail is incorporated in the Internal Management Directives of the Board, a less formal but highly detailed vehicle for expressing policy and procedure.[85]

Board policy on conflict of interest rests in the administrative regulations[86] and requires general adherence to the "Government Standards and Practices" (ethics) statute.[87] There is also a parallel section on outside activities in the Board's Internal Management Directives.[88]

The constituent universities of the system are free to establish policy consistent with statute, regulation and directive, but not every one has done so. Portland State University's policies are 10 years old are being rewritten. The campus web sites currently point only to the Board-level documentation described above. Portland State does have its own conflict policies. [89]

---

[80] *Postsecondary Education Structures Sourcebook,* supra. The Board governs altogether seven colleges and universities. A separate board supervises community colleges, each with its own board.
[81] Interview with Benjamin Rawlins, Esq., October 23, 2001.
[82] Interview with Dr. William Feyerherm, October 17, 2001.
[83] Oregon Revised Statutes Chapter 351, Sections 220 through 250. Available at: http://www.landru.leg.state.or.us/ors/351.hmtl.
[84] Oregon Administrative Rules. Chapter 580, Division 43. Available at http://arcweb.sos.state.or.us/OARS_500/OAR_580/580_043.html.
[85] Oregon State Board of Higher Education. Internal Management Directives. Sections 6.205 through 6.255. Available at: http://www.ous.edu/board/imd.htm.
[86] Oregon Administrative Rules. Chapter 580, Division 21, Section 25. Available at http://arcweb.sos.state.or.us/rules/OARS_500/OAR_580/580_021.html.
[87] Oregon Revised Statutes Chapter 244, Section 20. Available at: http://www.leg.state.or.us/ors/244.html.
[88] Sections 4.011 and 4.015. Available at http://www.ous.edu/board/imd.htm.
[89] Portland State University. Office of Research and Sponsored Projects. Guidelines for Avoiding Conflict of Interest Between the University Faculty and the Private Sector. Available at: http://www.gsr.pdx.edu/rsp/policies/conflict.html.

Division of operating responsibility

IP management at Portland State is the responsibility at present of the Vice Provost for Research and Graduate Studies. The effort is small enough (.25 FTE) that the Vice Provost has found it desirable to contract for disclosure processing and evaluation services with the Oregon University of Health Sciences, which is independent of the Board's direct control but highly experienced in IP issues. Conflict procedures consistent with NSF/PHS rules are managed by the Vice Provost.

Licenses of Portland State IP must be approved by the Director of Legal Services for the Board. The IMD notes that presidents are encouraged to assist in commercialization, but with their own resources. The Board has created a council of technology transfer directors of System institutions who meet together on a regular basis to exchange information.

Synopsis of IP ownership policy

Scope of university's claim to IP	• Any invention conceived or developed using institutional facilities, personnel, information, or other resources; and • Copyrightable educational and professional materials, which result from the instructional, research, or public-service activities of the institution.
Justification	• To "provide systematic means of bringing inventions, technological improvements and educational and professional materials into the public domain [and] encourage the development of new knowledge while protecting traditional academic freedom…"
Exceptions	• Scholarly or professional journal publications where no compensation or royalty is involved; • Lecture notes and materials prepared with only "incidental" use of facilities funds and staff; • Books or artistic works, unless prepared in compliance with work assignments or significant institutional resources used; and • Inventions or materials waived back to the inventor or author.[90] • Note that "outside activities" are not subject to Board policies except those regarding conflict of interest.
Obligation to disclose	• Uniform across the claimed scope.

Distribution of royalties

Distribution policy at the Oregon University System is as follows:

- Expenses are deducted from gross royalties
- To the inventor(s):

[90] However, waivers of faculty inventions based on the university's unwillingness to pursue patent protection or commercialization are limited, requiring continued royalty sharing by the inventor who chooses to protect and commercialize his own invention.

- 40 percent of the first $50,000
- 35 percent of the next $50,000; and
- 30 percent of all additional net royalty income on inventions; OR

- The remaining percentage to the institution, at the discretion of the President subject to Board policy on budgets.

The university shares 50 percent of revenues from educational materials with the author.

Institutional equity holding

The Legislature has recently approved a constitutional amendment to enable the System to take equity in lieu of cash royalties in licensing deals, but this will require a public referendum vote. In the interim, an affiliated foundation could be one way around the current constitutional restriction, but each university in the System is permitted only one foundation, and Portland State's foundation is devoted to philanthropy, and not used for licensing purposes.

Industry sponsorship

The Internal Management Directives require that all research agreements "normally include" protection of publication rights and the right to take title to inventions. Staff must be advised of any IP limitations imposed by any research contract. The IMD specifically authorizes granting to research sponsors licenses and "in cases where it appears in the interest of the Board…the right to acquire a proprietary interest." However, outright assignment of IP is not done.

A troubling issue for Oregon arises regarding buildings financed with tax-exempt bonds. IRS rules against "private activity" require that IP developed in such buildings be licensed at arms-length. To the extent that licenses are pre-arranged in "master contract" arrangements with industry sponsors, this violates the private-activity rule. Private activity may be associated with up to 10 percent of a state's tax-exempt bonding program, but this cap has never been tallied in Oregon, and the System views itself as great risk of exceeding the cap and subjecting bond-holders to tax penalties.

Portland State encourages industrially sponsored research with the usual provisions on maintaining freedom to publish. The Vice Provost called out as particularly "horrible" the standard contract of the Semiconductor Research Consortium, which he said could force the university to lay out patenting expenses for newly discovered IP, subject to potential reimbursement at a later date.

Consulting

The policies of Portland State encourage outside activities that, among other criteria, "provide an opportunity for professional growth through interaction with industry, business, government, and other institutions of society." Consulting is deemed appropriate (up to one day a week in the Portland State collective bargaining agreement) provided:

- It is "not to the detriment of university obligations";

- It does not involve a conflict of interest;
- Institutional facilities and resources are not used.
- Prior approval has been requested.

Spin-out/conflicts

The Board Institutional Management Directive requires institutions to adopt policies and procedures that include:

- Appropriate limitations on outside activity such as one day week.
- Identification of activities that will not require review and prior approval.
- Identification of those activities requiring disclosure (but not necessarily approval), including any or all of:
    - Acceptance of compensation or ownership of equity in a private entity;
    - Service in a line management position of same;
    - Service in a key, continuing role in scientific and technical activity of a private entity;

Additional activity going beyond consulting is recognized as potentially of "significant benefit" but posing the potential for conflicts of interest and time. Conflict-management criteria stress:

- No distortion of academic programs;
- No compromise of intellectual freedom or rights of any member of the community;
- No more than one day a week; and
- No line management except under extraordinary circumstances.

A separate provision of the policy pertains to research relationships with business entities in which a faculty member has an interest. Its main requirements are:

- The financial interest "will not affect the conduct of research and technology transfer, in accordance with…the highest professional standards;
- The university's interests are maintained;
- The research activity is appropriate to the university's missions;
- Consulting for a research sponsor is not desirable;
- The environment must remain open;
- Relations between senior and junior faculty must not be influenced or compromised; and
- Effects of student involvement should be carefully weighed.

Benchmarks

Benchmarks in IP issues are not addressed the Board level. At Portland State, the Vice Provost looks for benchmarks to his peers at the Council on Research Policy and Graduate Education of the National Association of State Universities and Land Grant Colleges and the independent Council of Graduate Schools (since about half graduate school deans also have responsibility for research and technology transfer). Specifically, he has examined Indiana University, the University of Massachusetts at Boston, and the University of Missouri at Kansas City. For best practices he looks to institutions with blockbuster commercialization successes, like the Wisconsin Alumni Research Foundation (Vitamin D enrichment; blood thinners) and the University of Florida (Gatorade).

Self-identified issues

The Director Legal Affairs regards the centralization of authority in the System as a strength, as it allows constituencies to have a single point of contact that can speak with consensus as to IP philosophy. However, the parallel weakness is that processing can take more time. He places great stress, though, on rapid turnaround of license and other approvals.

The Vice Provost particularly appreciates the technology transfer council as it allows him to fend off those outside parties that may try to play one university against the other. He is able now to ask his peers if they actually have "bought off" on terms that are being proposed to him as already accepted somewhere else. As a weakness he cites the unionized faculty environment at Portland State as a peculiar complication.

TEXAS – UNIVERSITY OF TEXAS AT AUSTIN

Organization

Texas has a governance system unlike Idaho's. There exist several distinct public university systems, each with a multicampus scope and its own system board, and the only state-level agency is a non-governing coordinating board.[91] For the purposes of this project, Battelle has taken the Board of Regents for the University of Texas *system* as if it were a state-governing agency, although it is not. At the UT system level, Battelle interviewed the member of the System General Counsel's office responsible for IP issues.[92] At the University of Texas at Austin (selected as a benchmark because of its close relationship with the microelectronics sector), Battelle interviewed the Director of the Office of Technology Licensing.[93]

Division of policy responsibility

Texas law includes general provisions on conflict of interest and a specific provision of the Education Code on equity ownership.[94] Otherwise, IP[95] policy resides in the Regents Rules (with force of state regulation). Software,[96] conflict of interest,[97] and trademark[98] policies are handled somewhat less formally through approved and published System Administration Policies.

Under the general IP System Administration Policy, each component institution of the UT system is required to adopt as part of its Handbook of Operating Procedures methods for identifying, evaluating and marketing IP. The Board must approve these procedures. Likewise, the Handbook must include a research objectivity disclosure procedure consistent with Board policy.

Division of operating responsibility

OTL operates in the reporting line of the UT Austin Vice President for Research, with a high degree of business autonomy as to business decisions on evaluating and protecting IP, but under close legal supervision of the System Office of General Counsel with respect to licenses and other legal agreements, which are reviewed by OGC for legal suffi-

---

[91] *Postsecondary Education Structures Sourcebook,* supra.
[92] Interview with Georgia Harper, Esq., October 5, 2001.
[93] Interview with Dr. Paulette Brauetigham, October 19, 2001.
[94] Education Code chapter 51.912. Available at http://www.capitol.state.tx.us/statutes/ed/ed005100.html.
[95] Chapter 12 of the Regents Rules, available at http://www3.utsystem.edu/ogc/intellectualproperty/2xii.htm. Plain English synopsis available at http://www.utsystem.edu/ogc/intellectualproperty/ippol.htm.
[96] University of Texas. Administrative Policy Regarding Disclosure, Distribution and Licensing of Software. Available at: http://www.utsystem.edu/ogc/intellectualproperty/swadmpol.htm.
[97] University of Texas. Policy for Promoting Objectivity In Research. Available at: http://www.utsystem.edu/ogc/Ethics/conflict.htm.
[98] University of Texas. Trademark Policy. Available at: http://www3.utsystem.edu/ogc/IntellectualProperty/TRDMRKPL.HTM.

ciency and compliance with system policy. The OTL has generated funds in excess of its budget since 1998.

Synopsis of IP ownership policy

Scope of university's claim to IP	• All types of IP (including inventions, discoveries, trade secrets, or software) subject to any form of protection (patent, copyright, etc.), created by persons, including students:
	  ○ In the scope of employment;
	  ○ On system time, with use of system facilities, or financial support;
	  ○ In the course of sponsored research; or
	  ○ As a work for hire.
	• Trademarks.

Justification	• "…Encourage the development of inventions and other intellectual creations for the best interest of the public, the creator and the research sponsor."
Exceptions	• Scholarly, educational, artistic, or literary materials in the author's field of work, even though system resources may have been used and it is within the scope of employment; • IP unrelated to employment responsibility and developed on own time and with no more than incidental use of system resources; and • IP declined by the component campus and released to the inventor (notification within 180 days).
Obligation to disclose	• Uniform across claimed scope, except that software not considered commercially valuable may be publicly disclosed with a copyright notice, to avoid causing researchers whose primary focus is software hardship by insisting on strict adherence to rules on patentable inventions.

Royalty distribution policy

Policy of the UT System is as follows:

- Direct costs are deducted from gross royalties;
- 50 percent of net royalties to the creator; and
- 50 percent to the System, for use by the originating component institution for research or other purposes consistent with budget policy, or to be accumulated in an endowment fund whose income is distributed to the component institution.

This allocation may be adjusted by component campuses through their Handbook of Operating Procedures, but in no even does the creator receive more than 50 percent or less than 25 percent of net royalties. The 50 percent is considered high in some quarters and is under review.

Institutional equity holding

System policy allows it to receive equity in lieu of cash royalties. Sharing this interest with the creator is at the option of the component campus, and policy is not uniform across the components of the system. The components have asked for more guidance, and a Commission is looking into the question. The system may also negotiate for equity shares on behalf of its employees. UT Austin has done some equity deals but they have not yet cashed out.

Industrially sponsored research

Industry research sponsors may receive the right to review and comment on IP during a brief publication delay. The university will not assign IP rights to sponsors except in one special case. At UT Dallas, which was endowed largely by Texas Instruments, that company has first right to assignment of inventions. The system would probably not do that same deal now, Battelle was told, because Texas law requires proper compensation for public property, and there is no way to know the value of IP not yet discovered, let alone commercialized.

Software may be transferred to industrial sponsors as a deliverable or through royalty-free license "only when the consideration flowing to the University is adequate to justify the transfer."

The System OGC reviews all industry-sponsored research contracts, looking for the three or four areas that typically cause conflict. The OGC also negotiates master agreement/task order arrangements, typically but not exclusively with pharmaceutical company sponsors of clinical trials.

Consulting

The UT Regents Rules state that consulting "should not be discouraged" because "continuing contact with nonacademic problems" is a value to the university. The rule stresses that primary responsibility of faculty members is to their assigned duties, and that any consulting must comply with ethics and conflict standards. The UT Austin Handbook of Operating procedures further specifies a limit of 20 percent of the full-time obligation and a requirement for prior approval by department chairman and dean.

Startup/conflict issues

System policy defines conflict of interest as the employee's financial interest in a research sponsor causing bias in the design, conduct or reporting of research or educational activities. Texas law now clarifies that it is not a violation (but requires disclosure and approval by the system board) for an inventor to own equity or serve on the board of a company involved in commercializing his or her own UT inventions. The system provides its components with a checklist for conflict management plans consistent with NSF/PHS rules.

Benchmarks

The OTL at UT Austin does not benchmark, though they did look at models for seed-stage equity funds associated with universities, such as the NC State Academy Centennial Fund. The office resists being scored by royalties or spin-offs alone because it believes it brings much value to the university in increased sponsored research.

Self-identified issues

The OGC IP specialist observes that the system has been around for a long time and reached a lot of faculty with a consistent message of "service" not barriers. She believes that success is really a "cultural issue." She notes that the Houston-based M.D. Anderson Cancer Center is more aggressive about spin-outs than any other component including UT Austin. She thinks that if approval of conflict management programs were delegated to the components, it might help those institutions that have not yet become active. Another option is a centralized system staff to promote startup formation. Also, she anticipates continued toughening of conflict policies.

The OTL Director thinks the relationship with the system OGC works well because there are good people in the role. She praises them for being lawyers who know how to say "yes." Without such people, the organizational structure has the potential to be very obstructive.

She also believes the 50 percent royalty rate is too high and points out there is no evidence that high rates lead to more disclosure. She points out that the leaders of AUTM statistics, Stanford and MIT, do not pay exceptionally high royalties. She believes it would be better to return some to the departments so that the "buy into" the IP management process and become supporters. Her other views include:

- To succeed, an IP office cannot be seen as the IP "police";
- The office has a service role since it can spend as much time on an MTA as on a highly lucrative license. Budget and policy need to recognize this; and
- The office should not be required to self-fund because that constrains future growth in hiring and spending on patents that have no current sponsor.

UTAH—UTAH STATE UNIVERSITY

Organization

The State Board of Regents is the governing agency for four public universities and five community colleges in Utah.[99]. At the state level, Battelle interviewed the special assistant to the Commissioner.[100] At Utah State University (a benchmark for the University of Idaho), Battelle interviewed the Associate Vice President for Research, who is serving as acting director of the Office of Technology Commercialization (OTC) and to whom it reports when the position is filled.[101]

Division of policy responsibility

In Utah there is a labor statute called the Employment Inventor's Act,[102] which states that no employer may require as a condition of employment the assignment of IP created on an inventor's own time, but clarifies what is an "employment invention" in the course of employment duties. There is also a Utah Public Officers and Employees Ethics Act.[103] The Board considers that both these statutes apply to it as the employer of university faculty and staff.

On general IP policy, however, the Board has never had a policy, although it considers it within its general powers to set policy or procedure on any topic. The Board came close to enunciating a policy on distance-learning materials, development of which it was supporting through dedicated funding at the campuses, but eventually decided the issue was so controversial and complicated that it should not be in Board policy.

One policy area in which the Board did become active involved its concern that the state's Government Records and Management Act (a freedom of information law)[104] provided insufficient exemptions for university-owned IP that must be held confidential. The Board sought and received clarifying language that was added to its own "institutional" section of the Utah Code.[105]

Utah State University maintains its own policies on IP,[106] conflict of interest,[107] and compensation/commitment issues.[108]

---

[99] *Postsecondary Education Structures Sourcebook,* supra. The universities have their own institutional councils (local boards) that have broad governing powers. While the Board of Regents is legally a governing board, it serves in practice as a coordinating council, except in the matter of presidential appointments, a right it reserves to itself.
[100] Interview with Harden Eyring, October 5, 2001.
[101] Interview with Dr. M. K. Jeppesen, October 17, 2001.
[102] Utah Code 34-39. Available at: http://www.le.state.ut.us/~code/TITLE34/34_11.htm.
[103] Utah Code 67-16-1 et seq. Available at http://www.le.state.ut.us/~code/TITLE67/67_0D.htm.
[104] Utah Code 63-02. Available at http://www.le.state.ut.us/~code/TITLE63/63_01.htm.
[105] Utah Code 53-16-302:305. Available at http://www.le.state.ut.us/~code/TITLE53B/htm/53B16012.htm.
[106] Utah State University. Policy 327. Available at http://personnel.usu.edu/policies/327.
[107] --. Policy 307. Available at http://personnel.usu.edu/policies/307.htm.

Division of operating responsibility

IP management at Utah State is handled by the OTC, in the reporting line of the Vice President for Research. Also reporting to that Vice President is a "Research Foundation" but it is a special-purpose research institute with its own employees, not a technology transfer foundation. Conflict of interest disclosures consistent with NSF/PHS rules are managed by the Office of the Vice President for Research.

Synopsis of IP ownership policy

Scope of university's claim to IP	• All rights to inventions of university employees and non-university employees including students using facilities, equipment, or materials paid for by the university.
Justification	• "The University is entrusted with the responsibility of administering its own intellectual property in the best interests of the public."
Exceptions	• Inventions stemming from consulting work, provided university approves in writing IP provisions of the consulting agreement and services performed according to policy; • "Work" created on personal time, and not an employment invention under the Inventions Act, supra.; and • Rights abandoned by the university and returned to the inventor or author, subject to reimbursement of the university's expenses.
Obligation to disclose	• Uniform—including IP resulting from consulting or private business ventures if related to employee's expertise (university will evaluate whether it has rights and state if it does not).

Industrially sponsored research

The university IP policy commits the campus to the right to publish freely. Publication delays of up to 60 days are granted for review and comment on IP issues. The IP policy also explicitly contemplates exclusive licensing of IP to industry sponsors. All industry contracts pass through the OTC for review.

[108] --. Policy 377. Available at http://personnel.usu.edu/policies/377.htm.

Royalty distribution policy

Current policy on royalty distribution at Utah State University is as follows:

- Expenses are deducted from gross royalties (or gross proceeds from any patent marketing firm that may be engaged);
- To the inventor or author:
    - 100 percent of the first $5,000
    - 40 percent of amounts between $5,000 and $50,000
    - 35 percent of amounts between $50,000 and $250,000
    - 33 percent of amounts over $250,000
- To the generating "unit" or department, usually for the activities of the inventor's lab, on the same scale:
    - 0 percent
    - 30 percent
    - 33 percent
    - 33 percent.
- Residual to the university, on the same scale:
    - 0 percent
    - 30 percent
    - 32 percent
    - 33 percent
- $1,000 bonus upon the university or its assignee/agent obtaining a patent.

As this report was being prepared, the Utah State faculty senate was considering a revised policy:

- Expenses deducted from gross royalties
- A 15 percent fee deducted to defray general expenses of the OTC;
- To the inventor:
    - 50 percent of amounts up to $500,000
    - 40 percent of amounts from $500,000 upward
- To the generating unit:
    - 25 percent of amounts up to $500,000
    - 30 percent of amounts from $500,000 to $2 million
    - 20 percent amounts over $2 million

- Residual to the university, on the same scale:
    - 25 percent
    - 30 percent
    - 40 percent.

The OTC commits to a 10-week turnaround on decision-making regarding patents. This is useful in evaluating whether the university owns courseware, a matter handled on a case-by-case basis.

Institutional equity holding

There is some confusion as to whether equity can be held by the institution. Utah State has done so to a limited extent, but far less than the University of Utah. Utah State is looking at the feasibility of having the OTC work in concert with a university-affiliated or independent foundation that could clearly hold equity. A study is under way on the advantages or disadvantages of each approach.

Consulting

Utah State allows faculty to consult three days per month, provided they have requested permission through their department heads in advance as "consulting service leave." Policy recognizes that such activity by faculty "increases the competence of the consultants in their professional roles and brings recognition to the University." Excluded are engagements included in the employee's university job description.

Faculty roles in spinouts

Utah State's conflict policy is very general, encompassing both business and research operations of the university, and calling for disclosure to department head or director, with a copy to the dean or vice president, of all "reasonably foreseeable potential conflicts." It does not explicitly cite NSF/PHS guidelines. Notably, however, it includes the following passage:

> "This policy does not intend to deny any employee opportunities available to all other citizens of the state to acquire private economic or other interests so long as it does not interfere with the full and faithful discharge of his/her University duties or disadvantage the University in any manner. Conflicts of interest are not necessarily unwarranted, unethical or illegal—nor are they always avoidable. Rather, it is the failure to disclose conflicts or potential conflicts to appropriate authorities; to continue to engage in a conflict after disapproval by appropriate authorities; or to further conduct oneself in a manner that unethically hurts, hinders or disadvantages the University; that must be avoided."

Benchmarks

The Board does not benchmark the campuses on IP issues. Utah State itself looks for benchmarks to NC State University, University of Utah (with whom it shares ideas, and which hired a licensing director from MIT), and Georgia Tech.

Self-identified issues

The Associate Vice President sees the strength of the system in that it has done a good job of protection and patenting of IP, and working with licensees. He believes it still has significant weaknesses in the external marketplace, and in interacting with private sources of capital necessary to build spin-off businesses.

WASHINGTON—WASHINGTON STATE UNIVERSITY

Organization

Washington State has a governance structure unlike Idaho's. The state-level higher-education agency has no governance responsibility but only a coordinative role. Instead, each public university is constituted with its own board of trustees or regents.[109] Therefore Battelle conducted no state-level interview. At Washington State University (a benchmark for and long-time partner of the University of Idaho) Battelle interviewed the Associate Vice Provost for Research.[110]

Division of policy responsibility

There is no division of responsibility between state and campus. The Board of Regents of Washington State University sets its own policy, subject to state law such as the Washington State Ethics in Public Service[111] Act. Section IV of the University Policies manual[112] addresses IP and consulting issues. It has been revised several times since 1992 to meet concerns of the faculty, which more than anything else wanted a more generous royalty distribution to inventors (see below). Battelle was advised that somewhat more-detailed business procedures also exist[113] but may not yet fully reflect these latest iterations.

The university has also just released a separate guide to compliance with the ethics act (see further below), which it describes as "complex, relatively new, and not fully instructed by previous case determinations."[114]

Division of operating responsibility

There is no division of operating responsibility between state and campus. IP management at Washington State University is performed by the Office of Intellectual Property Administration (OIPA), in the reporting line of the Vice Provost for Research. Since 1939 the university has had an affiliated Research Foundation, because it was the only way to obtain patent counsel without violating state law prohibiting the university itself to use any counsel other than the state attorney general.[115] The Foundation serves as li-

---

[109] *Postsecondary Education Structures Sourcebook,* supra.
[110] Interview with Dr. Ken Spitzer, October 12, 2001.
[111] Revised Code of Washington 42.52. This complex law and its various implementing regulations are all available at http://www.wa.gov/ethics.
[112] Washington State University. Policies Manual Section IV. Available at: http://www.wsu.edu/Faculty_Senate/section4%20FM.htm.
[113] --. Business Polices and Procedures Manual. Chapter 35 – Intellectual Property. Available at: http://www.wsu.edu/~forms/HTML/BPPM/35_Intellectual_Property/35.00_Contents.htm.
[114] Dr. George Hedge, Vice Provost. "Advice for Research Principal Investigators; Compliance with the Washington State Ethics in Public Service Act." October 11, 2001. Made available by Dr. Spitzer.
[115] This was the same reason that the University of Washington for many years managed its IP through the Washington Research Foundation. When UW decided to take this function back in-house, and Washington Research Foundation became a seed fund, special permission from the state was required.

censing agent for OIPA and also administers the WSU research park, which generates $200,000 that can be applied to OIPA. The two organizations share staff, with OIPA making initial evaluations and the Foundation final determination on patenting.

Synopsis of IP ownership policy

Scope of university's claim to IP	• Discoveries and proprietary information developed using university equipment, supplies, facilities, employee time, or proprietary information, or which relate directly to the university's business or research; • Copyrightable works made for hire; • Copyrightable works as may be required to fulfill obligations under any sponsored research agreements; and • Trademarks.
Justification	• "To encourage a healthy atmosphere conducive to research and development through a system of rewards and incentives for the creation of intellectual property, while at the same time giving proper consideration to the responsibilities that the University has as a land-grant university." • "It is desirable in the public interest in some cases to seek University intellectual property protection for these works and discoveries. Commercialization through licensing the use of the property provides an opportunity for both income to the inventor and support for further University research and scholarship."
Exceptions	• Inventions for which no equipment, supplies, facilities, or proprietary information were used, and developed entirely on the employee's own time; • Copyrightable works unrelated to the employee's responsibilities and developed on their own time without university support or use of university facilities; and • Scholarly, educational, artistic, musical or dramatic materials—unless using substantial university resources, or pursuant to written agreement or a third-party research contract. [Substantial means use of staff time other than peer review, provision of funding, or provision of equipment facilities and supplies beyond what is usually provided for employment obligations].
Obligation to disclose	• For inventions, uniform across the claimed scope. • For software, disclosure is particularly encouraged if potentially patentable.

Royalty distribution

The most recent iteration of royalty-distribution policy, adopted in order to encourage enhanced disclosure flow by demonstrating generosity, is as follows:

- Expenses are deducted from gross royalties to obtain "adjusted income"

- 20 percent of adjusted income as a fee to the Foundation, applied toward administration of OIPA and patent prosecution for properties without sponsors, to yield net income
- Of net income, to the inventor:
    - 100 percent of amounts up to $10,000
    - 50 percent of amounts from $10,000 to $200,000
    - 25 percent of amounts over $200,000.
- The remaining percentage to the university on the same scale, of which:
    - 20 percent will be split between the inventor's department and College or branch, and
    - The returned to OIPA although formally designated for "research."

There are separate schedules for revenue obtained from license of seed-propagated crops and for vegetated propagated crops. For copyrightable material, the Foundation may also subtract from adjusted income the university's expenses in developing and distributing the work (as in courseware).

Institutional equity holding

There is no explicit policy on equity holding. The Associate Vice Provost believes it would be held by the Research Foundation, liquidated as soon as possible, and proceeds distributed per usual policy. The university had several bad experiences with equity holding, and it may not be repeated.

Industrially sponsored research

Policy states that the university "will not accept grants or enter into agreements for the support of instruction or research that confer upon an external party the power to censor, unduly delay, or exercise effective veto power over…. the publication of research." A 60-day delay of publication is permitted and sometimes is extended. The university never assigns IP to industrial sponsors because this would raise concerns of private use of state property. The university has found the most problems with small companies whose counsels are not sophisticated about university practice.

Consulting

University policy notes that the state ethics law (see above) restricts use of state resources for private purposes, but allows employees to receive "honoraria" if authorized by the agency where they serve. In fact the university policy encourages "worthwhile" outside consulting that does not interfere with performance of duties and when no conflict of interest exists. Consulting is limited to one day a week and must be disclosed promptly and reported annually.

Start-up/conflict issues

The university's conflict policy calls for disclosures consistent with NSF/PHS guidelines on an annual basis, submitted to the supervisor and rising to the Provost. The activity most strongly discouraged is taking research money back into one's lab from a company in which one holds a disclosable interest. Such arrangements must be negotiated by someone other than the PI. Activities for which prior approval is required include:

- Ownership of "substantial" equity in a commercial enterprise that carries on activities closely related to the employee's area of work;
- Holding a line management position in such an enterprise, which is not approved except in rare cases.
- Assumption of "an important continuing role in the scientific or technical aspects" of such an enterprise.

No approval is required for:

- Minor holdings of stocks
- Uncompensated service on boards of directors and compensated services when not in conflict;
- Ownership of equity in a company used solely for consulting;

Criteria for approval include:

- Non-interference with the employee's primary obligations or the integrity of the university.
- Total time commitment not exceeding one day a week
- No anticipated distortion of the direction of students

Benchmarks

Washington State looks to the AUTM leaders: Harvard, MIT, Berkeley, Florida (the IP director came from there), and the University of Washington.

Self-identified issues

The Associate Vice Provost notes that the campus has no major IP successes "where you can see faculty members driving Mercedes," and so a major task is to try and convince

faculty and chairs that IP management is good for the institution and for them. His goal is to convince faculty that technology transfer is rewarding, remunerative, and protective of future research options. He would like to have more flexibility in matters like using a patent marketing service or taking one-time fees rather than regular royalties on small but time consuming deals.

WYOMING—UNIVERSITY OF WYOMING

Organization

Wyoming's governance structure is not entirely like Idaho's. The University of Wyoming itself (a benchmark for University of Idaho) is itself the state's constitutional governing agency for higher education.[116] The university's Laramie campus thus constitutes the entire state system. Therefore the state and university level are the same. Battelle interviewed the university's Vice-President for Research.[117]

Division of policy responsibility

There is no division of responsibility between state and university, as the university is itself a constitutional state agency. IP policy resides in University of Wyoming regulation.[118] Conflict of interest and terms of industrially sponsored research are treated briefly as components of this regulation. Conflict of commitment policy is in a separate regulation.[119].

Division of operating responsibility

There is also no division of operating responsibility. IP management is the responsibility of the Wyoming Research Products Center (RPC), which is structured as a collaborative effort between the Wyoming Business Council and the university. The RPC is in the Vice President for Research reporting line. Conflict reporting goes to the Vice President, but consulting clearance is run by the Provost.

---

[116] *Postsecondary Education Structures Sourcebook,* supra.
[117] Interview with Dr. William Gern, October 5, 2001.
[118] University of Wyoming. UNIREG 641, Revision 3. Dated 1994. Available at: http://uwadmnweb.uwyo.edu/legal/uniregs/ur641.htm.
[119] UNIREG 172. Dated 1997. Available at: http://uwadmnweb.uwyo.edu/legal/uniregs/ur172.htm.

Synopsis of IP ownership policy

Scope of university's claim to IP	• Every invention which results from research or other activities carried out at the university, including by students, or developed with the aid of its facilities or employees, or with funds administered by it; • Computer software resulting from research activities at the university and developed with aid of university hardware; • Video or "other" [interpreted as Internet] courseware resulting from activities at the university and developed with aid of facilities, staff, or funds; • All other copyrightable work for hire; and • Trademarks.
Justification	• "These policies have been established to ensure that those inventions and materials in which the University may have an interest will be utilized in a manner consistent with the public good." • "To provide incentive to create intellectual effort by University employees." • "To provide the means for placing in the public realm the results of research, while safeguarding the interests of the inventor or author, the University, and the sponsor."
Exceptions	• Inventions made entirely on personal time (defined as other than that devoted to normal or assigned functions) and which do not involve use of resources, facilities, or materials; • Copyrightable material that is not work for hire and is not software or videotaped productions; and • Inventions released to the inventor, subject to perpetual royalty free non-exclusive license (and federal law).
Obligation to disclose	• Uniform across the claimed scope.

Distribution of royalties

The university has adopted a generous royalty distribution policy, which the Vice President says has not proven effective in stimulating disclosure flow and may be replaced by a sliding scale (a task force is in formation). Currently the policy is:

- 60 percent to the inventor/author
- 40 percent to the university.

Of the amount retained by the university:

- Half is allocated to the college of the inventor, possibly for release to the department; and
- Half to a research and development fund controlled by the Vice President for Research in consultation with a Research Advisory Committee.

Remuneration for video courseware whose ownership is claimed by the university is subject to negotiation.

Institutional equity holding

State entities in Wyoming may not hold equity directly. Any equity received in lieu of royalty would be held in the university's endowment foundation. Upon a liquidity event, the foundation would cash out and distribute proceeds according to the policy above. However, the opportunity to follow this procedure has not yet arisen.

Industrially sponsored research

According to the regulation, the university "normally" reserves ownership of inventions arising from industrial research. However, "special provisions…may be negotiated by the University," provided the university retains perpetual royalty free rights to use the invention its own research and educational activities. So far no IP has been assigned to a sponsor, but this is not ruled out. Policy allows for a publication delay of up to one year in total (but only 90 days for notice).

Consulting

University regulation defines conflict of commitment as any non-university activity that interferes with meeting workload obligations or redirects primary professional loyalty outside the university. Each unit may implement its own standards, and employees must disclose potential conflicts to their supervisors. In general the consulting allowance follows AAUP guidelines. All consulting must be disclosed through the department head, the dean and the president.

Conflict of interest and commitment

Disclosures consistent with NSF/PHS policy are processed through the Vice President for Research. University regulation also warns specifically of the potential for conflict between IP provisions of consulting arrangements and faculty members' university work. Such consulting agreements must be submitted in advance to the Vice President of Research for review. The Vice President also stresses the need to avoid negotiating with one's own faculty in a spin-off situation.

Benchmarks

The university looks for benchmarks on IP issues to public universities in Ohio and Indiana. On how to manage conflict of interest, it looks to private institutions like Stanford and MIT.

Self-identified issues

The Vice President believes the university "got ahead of the curve" on web-based instructional materials, but fell behind on modern strategies for managing conflict of interest. The university is trying hard to be entrepreneurial, even revamping its mission statement to include a specific recognition of the mandate to assist the state in building a technology component to the economic base. On the downside, the Vice President cites

nology component to the economic base. On the downside, the Vice President cites this new flexibility as a possible weakness requiring great due diligence by "several sets of eyes" on every deal, including university general counsel and the contracts office.

Appendix 2—Interview guide

The Idaho State Board of Education has engaged Battelle Memorial Institute's Technology Partnership Practice to advise members of the Board on current practices in the area of intellectual-property (IP) policy and management at selected public universities. Your state's public university system and/or your campus have been identified by the Idaho State Board as a benchmark or a best practice. Battelle's role is to try and understand the meaning, effect, rationale, and origins of current policies and procedures, and then to present these findings to the Idaho State Board.

Battelle will attempt to speak with appropriate staff members at both the state governing board (or state-university system governing board) and at least one university or campus in the system. You may have received this interview guide in one or the other capacity:

- If you represent the state or system-level, and IP matters are handled exclusively at the university-campus level, Battelle would still be grateful to speak with you at least about question 1 below.
- If you represent the university campus level, Battelle would still be grateful to speak with you about the full range of questions, regardless of the level at which policies are codified.

If any of these matters would be better handled by a colleague of yours or a designee, Battelle would be grateful for your direct referral to the appropriate party.

Questions

1. At what level are your IP policies codified: Statute? Administrative regulation or rule with the force of law? Policy of the state-level governing board? Or policy at the particular university or campus level, with variation possible between sites? What are the policy, historical, or legal reasons that underlie that choice of boundary?
2. What is the broad outline of IP ownership policy for:
    a. Patentable inventions;
    b. Traditional academic forms of expression such as textbooks, literary or artistic works;
    c. Courseware and course materials;
    d. Software;
    e. Plant varieties;
    f. Electronic-circuit mask designs; and
    g. Research data?

3. What is the range and extent of the obligation to disclose? Does the reporting requirement vary by the type of IP listed above? Does it vary according to whether the research sponsorship was federal or industrial?
4. What resources are committed to enable prompt processing of disclosures; and in what way are patenting decisions made and financed?
5. What confidentiality policies balance the traditional rights of faculty to publish freely (and the need for graduate students to complete and defend their dissertations) with the need for the university system to assert its ownership interests and/or protect the licensing rights of its research sponsors (federal or industrial)?
6. What policies apply to distribution of royalties and equity shares received by the university or the university system in consideration of licensing rights to IP, and what were the reasons for adopting this particular distribution?
7. What policies balance the need to be "recruitment friendly" to entrepreneurially inclined faculty with the need to observe the highest standards in disclosing and managing real and perceived conflicts of interest and commitments?
8. What policies apply to faculty consulting; faculty shares of institutional equity; faculty holding of "founders' equity"; and generally to faculty service in various capacities at spin-out companies?
9. Are there any special IP arrangements you make on review or negotiation of industrially sponsored research? Post-grant management of same?
10. What are the perceived strengths and weaknesses of the IP system currently in place in your state's public universities?
11. What changes in policy or practice have you recently made or are contemplating for the near future? What trends do you see unfolding in peer states and public institutions, or at the national level?
12. What other public systems around the nation do you look to for benchmarking, inspiration and best practice?

Background on Battelle

Battelle Memorial Institute is a private, non-profit organization based in Columbus, Ohio, and recognized worldwide for technology development, management, and commercialization. Battelle employs 7,000 technical, managerial and support staff worldwide, serving a wide range of government and industry clients. In 1991 Battelle created a Technology Partnership Practice to focus its experience on serving economic-development organizations, state and local governments, business councils, universities, and other non-profits across the United States. The practice is based in Cleveland with associates in Washington, D.C., New York, and California. For further information please contact Walter H.

Plosila, Ph.D., Vice President for Public Technology Management, at (216) 898-6403 or plosila@battelle.org.

Background on the Idaho State Board of Education

The Idaho State Board Executive Director is Mr. Gary Stivers. The project manager for this engagement is Ms. Jimmi Sommer of the Idaho State Board staff (Email: Jsommer@sde.state.id.us). The Chairman of the Idaho State Board's Instructional, Research and Student Affairs Committee is Mr. Roderic W. Lewis, who is General Counsel of Micron Technology, Inc., of Boise. The Board's Advisory Committee on Intellectual Property includes the Vice Presidents for Research of both the University of Idaho (Dr. Charles Hatch) and Idaho State University (Dr. Ed House).