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University-Industry Relations brochure

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This brochure discusses issues in collaborative research relationships between universities and industry.

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Council on Governmental Relations

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This brochure discusses issues in collaborative research relationships between universities and industry. While not COGR’s primary focus, these relationships are heavily influenced by federal policies and regulations, and are the subject of increased scrutiny and concern. The brochure should not be taken as providing formal legal advice, and COGR cannot and does not warrant the legal sufficiency of any of the discussion in this brochure. If legal and/or other professional advice is sought with regard to the matters discussed in this brochure, the advice of a lawyer or other professional should be obtained.

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UNIVERSITY INDUSTRY RESEARCH RELATIONSHIPS

I. Introduction

The environment and expectations for collaborations between universities and industry is changing. While international competitiveness, rapid technological advancement, cost pressures, and the growth of science-based and technology-intensive industries remain significant reasons to stimulate collaboration, other macro-factors are influencing the emphasis on these collaborations and their nature. As companies decrease the size and scope of their internal research laboratories, companies are increasingly turning to universities for basic research. Federal and state governments are developing funding programs that emphasize collaboration between universities and companies that will enhance translational research and support economic development. In part because of perceived difficulties in initiating collaborations, there is increased scrutiny and at times criticism of the practices of universities. Thus, it is relevant for COGR to examine these issues.

This brochure explores the nature and scope of university-industry research relationships and seeks to provide context for some of the tensions that frequently can plague the creation and implementation of university industry collaborations. In doing so, we hope to highlight some of the major issues that must be understood and addressed to facilitate successful collaborations.

At the outset it is important to note that not all companies or universities are alike in their approach to the topics that will be discussed here. Differences between companies in different industry sectors, and even between companies within a specific industry segment, should be recognized. Similarly, universities do not always speak with one voice on these issues. Public universities, private universities, and the land grant colleges and universities differ in their history, culture, and missions. Further, there are likely to be differences in the approach to these relationships between academic units within a university. For instance, differences between colleges of engineering, agriculture, and medicine are almost certain. In such an environment, certainly one size does not fit all, as anyone working in this challenging arena can attest. One must take into consideration the many differences in mission and expectations seen in large, complex organizations so that the parties can craft relationships that are truly mutually beneficial.

II. National Context

Cooperation between industry and universities has a long history. The foundation was laid with the passage of the Morrill Act of 1862 which created "land grant colleges" directed to apply new technological advancements in agriculture and engineering to enhance the economic growth and competitiveness of the agricultural industry.

More recently, a new and highly successful era of collaboration among research universities, government and industry began in 1980 with passage of the Bayh-Dole Act (P. L. 96-517, codified at 35 USC 200 *et seq*), which accelerated the transfer of research results from universities to the commercial sector. Prior to the passage of this Act, title to inventions which resulted from research sponsored by the federal government vested with the federal funding agency. Under this framework of ownership these inventions were rarely commercialized. Bayh-Dole clarified the roles and responsibilities with respect to ownership and commercialization of federally-funded, university-developed inventions, and created powerful incentives for technology transfer (see <http://www.autm.net/about/BayhDoleAct.cfm>). Key elements of the Act include: (1) establishing a uniform federal invention policy; (2) allowing universities to retain title to inventions developed through federally-funded research; (3) encouraging universities to collaborate with industry in promoting commercialization of inventions; (4) establishing preference for licensing to small entities and for manufacturing of products in the U.S.; and (5) retaining government march- in rights to ensure diligence in commercialization by patent licensees.

The results of the Bayh-Dole Act have been remarkable. Since 1980, 5,171 new companies have been formed that were based on the licensing of an invention from an academic institution. Furthermore, from 1998 to 2005 a total of 3,641 new products were developed and launched for commercial sale based on academic technology transfer [see AUTM FY2005 U.S. Licensing Survey, available at <http://www.autm.net/index.cfm>]. This economic activity represents the commercial development of innovations that span the full range of the social, physical, life sciences, and the arts and humanities. In addition, because this landmark legislation provided surety of title in inventions when federal dollars were involved, it allowed a company to enter into scope of work research knowing that its university partner can leverage federal dollars if appropriate and still provide the company access to any invention that arose from the research (See 21 Questions About University Technology Transfer; http://www.cogr.edu/files/publications_intellectual.cfm).

While the effects of this legislation have been significant, other factors as noted above have also prompted the creation and expansion of alliances between universities and industry. These include the growth and technological advancement of science-based industries, increased costs associated with basic research, decline of corporate research laboratories, state government incentives for collaboration to stimulate local economies, the increased need for American companies to be competitive in the global marketplace, and the Technology Transfer and the National Cooperative Research Acts of 1984.

It has been a generation since the passage of Bayh-Dole, and while the accomplishments resulting from the enablement of university technology transfer are significant, criticisms have emerged about the practices of universities. For instance, concerns have recently been expressed that Bayh-Dole principles have become so ingrained in the thinking of university technology transfer officials that every transaction or relationship involving industry is viewed only in the context of Bayh-Dole, even when it is not necessary, helpful, or appropriate. While these issues have received attention on and off over the last 15 years, more recently the National Academies has placed an emphasis on this area and has created a forum and approach to improved dialog and more efficient contracting practices. (University—Industry Demonstration Partnership; www.uidp.org/; see Part V).

III. Models of University/Industry Relationships

Universities and industry have different missions and cultures which can lead to challenges in the structuring and management of relationships. Nevertheless, an industry investment in university research exceeding \$2.3 billion dollars in fiscal year 2005 strongly suggests that there are mutual benefits to these collaborations. A diverse array of collaboration models that provide for different outcomes and offering different benefits to the participants have been utilized. Until the mid-1980's the most common relationship between universities and industries was a gift or unrestricted grant from industry to support the work of a specific faculty member or to provide overall support for an institution's research programs. Additionally, it was common for university scientists and industry scientists to informally collaborate and many universities actively encouraged their faculty to participate in consulting activities as a method of knowledge transfer and to assure that academic programs have a perspective on actual problems faced by industry. While these methods of collaboration remain strong, other models have emerged that permit more collaborative, focused research. Examples are:

- **Sponsored Research.** Direct sponsorship of university research by industry is now a frequent form of research relationship. Typically, the corporate sponsor provides funding for a specified statement of work over a limited period of time. Deliverables such as reports, test data, software, or materials may also be specified for the sponsored project. While most universities and companies have standard agreements they prefer to use to initiate these projects, certain terms, such as rights in intellectual property, publication procedures, and confidentiality, usually require further negotiation to tailor the agreement so it is acceptable to both parties.
- **Federal Sponsorship of Collaborative Research.** Certain federally-funded partnership programs such as the multi-agency Small Business Technology Transfer Program (STTR) and many of the industry/university collaborative research centers under the sponsorship of various federal agencies require university-industry collaboration as a condition to obtain federal funding. The terms of these collaborative research agreements may be stipulated by federal program guidelines, or may be negotiated between the parties to address such issues as joint technology development, ownership of intellectual property and future commercial development of intellectual property. Collaborative research, especially when partially funded by the federal government, enables participants to leverage resources to achieve mutually-beneficial research objectives.
- **Consortia.** In a university-based research consortium, participating companies join forces and contribute resources, often in the form of an annual fee, to support research in an area of common interest to the group. Consortia enable the members to leverage financial investments and provide cost-effective access to generic, pre-competitive research projects. The National Cooperative Research Act enables these relationships by permitting companies to band together to actively participate in cooperative research without fear of violating antitrust laws. In a typical university-industry consortium arrangement, consortium members have the first right to negotiate a commercial license to the results of the research conducted within the consortium. IRS Revenue Procedure 97-14 as modified by Rev. Proc. 2007-47, specifically provides a "safe harbor" for these arrangements for purposes of determining eligibility of the university facilities for tax-exempt bond financing. See Part V. below for more information.

- **Technology transfer through licensing.** University technology licensing has been a significant contributor to growth in science-based industries such as biotechnology. A typical license usually grants the company the right to make, use and sell commercial products under the university's intellectual property rights; the scope of the license (exclusive vs. nonexclusive, term, field of use, financial consideration etc.) is defined in the agreement. Finally, license agreements frequently include "due diligence" or performance milestones for the licensee.
- **Startup Companies.** The early development stage of many university technologies has led to a proliferation of "startup" or "spinoff" companies located near major research universities. In many cases, established companies are not interested in risking the necessary resources required to bring a risky new technology to the market so a new company is established to further develop the university technology. In addition, many early stage university technologies need a "champion" for successful transfer and would languish without the involvement of the university inventor(s) in the enterprise in some fashion. The new company may also rely on the academic research group for the technology base essential to company formation and growth. When successful, this results in the creation of new wealth, new jobs, and economic growth and development for the community. Often, if the startup company succeeds in commercializing the technology it may be acquired by an established company.
- **Exchange of Research Materials.** The exchange of research materials between university and industrial scientists has become a common practice. In most cases, a material transfer agreement is used. These MTAs generally stipulate that the materials are provided for research purposes only, and not for commercialization, and may raise other common issues such as intellectual property rights, publication of results, and ownership of the data generated during the research. There have been efforts to develop templates for master material transfer agreements, notably the Uniform Biological Material Master Agreement (UBMTA; see http://www.autm.net/aboutTT/aboutTT_umbta.cfm). For further discussion see Part V. below.

IV. Benefits of University-Industry Collaboration

Cooperative university-industry research and development efforts reached unprecedented levels in the 1990s and have continued to the present. Almost every state and federal agency funds some form of cooperative technology program. Several billion dollars is spent by states and the federal government each year to sponsor cooperative "public-private" technology development programs, including those involving universities, with much of this public support "matched" by private sector investment. Direct industry sponsorship of research at universities likewise has reached unprecedented levels. Despite recent declines (see <http://www.nsf.gov/statistics/infbrief/nsf06328/>), the latest data indicate that industry support of university research is trending upward again (http://www.nsf.gov/statistics/showsrvy.cfm?srvy_CatID=4&srvy_Seri=12). This strongly supports the perception that benefits accrue to both collaborators and that alliances are likely formed because it is perceived that a collaboration will result in more value to the participants than a separate investment of resources. The benefits take many different forms, a few of which are:

- **Basic Research:** Basic research is a major mission of universities, while applied research and development is more common in industrial laboratories (the exception may be

industry-initiated clinical trials that are commonly placed at academic medical centers). Research alliances with universities supplement industries' basic research needs when corporate R&D budgets are reduced by other competitive pressures. Furthermore, collaboration with universities is a means of monitoring new developments in science and technology and the opportunity to work on problems with a practical application.

- **Increased Awareness:** Collaboration with industry enhances the understanding of the challenges facing industry by exposing university faculty to industrial concerns and industrial approaches to research. Conversely, collaboration with universities helps industrial scientists stay current with the latest developments in broad areas of basic science that are of strategic interest to the company.
- **Graduate Education:** Industry funded research and internships enhance graduate education by providing faculty and students with a better understanding of industrial problems thus enriching the training of engineers and scientists for an industrial environment. These relationships also provide to the industrial partner a pool of candidates for job recruitment.
- **Business Opportunities:** In biotechnology and other science-based industries, universities are recognized as a fertile source of innovation and new business opportunities. The number of patents awarded to universities has been growing at an average annual rate of over 2% (see FY2005 AUTM Licensing Survey; <http://www.autm.net/index.cfm>). In addition, economic growth resulting from university spinoff companies and new product introductions based on university discoveries is substantial and increasing.

V. Challenges of University-Industry Collaboration

A collaboration between a university and a company partner results in the intersection of organizations with different missions and cultures. The primary mission of the university is the creation and dissemination of knowledge. In contrast, the focus of industry is on meeting customer needs in a way that maximizes return to stockholders.

Universities have a societal mission to provide education, conduct research and pursue public service based on the principles of free exchange of ideas and public access to an impartial source of information. Academic freedom, a basic principle of U.S. academics, allows the university researcher to pursue research agendas with open-ended goals, interact with colleagues, and freely publish the results.

Industry research and development agendas tend to incorporate specific milestones and timelines and are driven by profit objectives. Furthermore, companies often desire to control the publication of research results to protect a competitive position.

Collaboration between universities and industries brings benefits to each, but successful collaboration requires that both understand their differing cultures and objectives and actively seek ways to allow the collaboration to occur without seriously damaging the mission and goals of either. Some of the primary structural differences include:

- Universities are not pyramidal, well-organized structures. The chancellor or president is the head--in theory--but in reality faculty have a great deal of autonomy and within wide parameters chart their own course. In industry the CEO sets the direction and, as long as he or she retains the trust of the shareholders, determines the focus of the company.
- Universities are creative, but not very nimble. Their research is curiosity-driven and switching directions is not easy. Companies are likewise creative and curious, but because of the need to stay in business, can and do switch directions with greater ease.
- Universities have a culture of open communication consistent with the primary mission of creation and transmission of knowledge. Companies often seek to protect knowledge that may create a competitive advantage by maintaining secrecy.
- For universities, production and protection of intellectual property to encourage commercialization is not a cultural norm. It is typically more important for a faculty member to publish than to patent. For industry, generating, protecting and commercializing intellectual property including trade secrets, confers a competitive advantage in their field. Research spending by a company is an investment in future success and profitability. Spending that does not return a benefit to the company is a bad investment.

Potential collaborators should acknowledge the differing cultures and missions at the outset of discussions that may result in a collaboration. In their discussion, each party should seek collaboration structures that permit both to achieve their mission. There will be occasions when the university's research goals and the company's missions and goals are too divergent to permit a collaboration. When this happens the collaborators should recognize the mismatch to avoid protracted and unproductive negotiations that may damage the prospects for future efforts. Neither party should feel that they are obligated to enter into an agreement that does not allow either to accomplish its goals.

Over the years, there have been a variety of initiatives to develop template agreements or to create frameworks that acknowledge and address the inherent difficulty in establishing collaboration between these two very different organizations. While, to date, none has been completely successful, each initiative has presented an opportunity for thoughtful consideration of the potential benefits of collaboration and better understanding of the differences as well as the commonalities and potential ways to reconcile the differences. Recent examples of these initiatives include Working Together, Creating Knowledge: The University-Industry Research Collaboration Initiative (<http://www.bhef.com/publications/>), and the University—Industry Demonstration Partnership (UIDP) (see www.uidp.org/). The UIDP is the newest of these initiatives. As of this writing its membership includes 51 universities, 24 companies, a private foundation, and a government agency.

Collective experience has identified a handful of topics that can be problematic in establishing university industry collaborations.

Intellectual Property

Ownership:

The ownership of any intellectual property created in a sponsored research program can be a significant issue during the negotiation of a sponsored research agreement.

In general, universities seek to retain the ownership of inventions made by their researchers, for the following reasons:

- Giving up ownership of inventions may make it impossible for faculty and students to continue to pursue a line of research. A broad patent filed by an assignee may result in a blocking patent that would prevent the faculty member and students from using their own technology for further research.
- Most research at universities is still sponsored by the federal government (although, as described above, industry-sponsored research continues to grow), which requires universities to retain ownership of inventions (see below).
- Academic research often requires substantial resources for facilities, equipment, supplies and personnel. It is not unusual for a variety of funding sources to be utilized in a large academic research group. When research is supported within an academic research group with funds from both a corporate sponsor and the federal government, it is ill-advised to promise the company rights that would conflict with the requirements of the other sources of funding, in particular that of federal funding. Multiple sources of funding for a research effort require careful management and oversight. If federal funding is involved, ownership of inventions by an industry sponsor would require federal permission; access to the technology through licensing would not. (see The Bayh-Dole Act: A Guide to the Law and Implementing Regulations, October 1999; http://www.cogr.edu/files/publications_intellectual.cfm).
- If a licensee does not effectively develop the technology or if the license terminates, it will be much easier for the university to enforce diligence requirements or enter into a license arrangement with another party.
- Retaining ownership allows the university in some cases to grant non-exclusive licenses to promote broad utilization and maximize use.
- Ownership by the university helps maintain a relationship between the inventor and company scientists engaged in product development. In many cases, follow-on work by the researcher or additional know-how developed in the laboratory need to be transferred in order to make the discovery most useful to the company.
- The right to participate in the distribution of royalties is an incentive to inventors to disclose and invent. Burdensome or one-sided intellectual property provisions can create disincentives for faculty to participate in company sponsored research.
- An industry position that “we paid for it and we own it” treats the university researchers as employees and the research as a work for hire, and not as a collaboration by equals. Further, this position fails to recognize the significant investment in intellectual capital and resources that have gone into the development of the knowledge that led to the invention. Relationships like this tend to be less interesting for university faculty and do not reflect their intellectual input and expertise. They also may raise tax issues (see below).

Many companies prefer to own the intellectual property that results from the research sponsored at a university. Some industry sectors place a lower priority on patented intellectual property to maintain a competitive advantage and may consider intellectual property to be a commodity. Companies that operate with this approach may seek access to the technology through a non-exclusive royalty-free license. Often these companies seek to avoid a situation in which they have supported the academic research and the resulting technology is licensed to a competitor, and they have no way to use the invention. A non-exclusive royalty-free license provides freedom to operate, which might be acceptable for copyrightable works, technology that does not

require much development, or in industries where the products are the result of multiple components and incremental innovation. This approach is less acceptable for patented technology requiring substantial investment. At a minimum, corporate sponsors need to be assured that the results of the research they fund will be available to them so that they can maintain a commercial advantage.

Background IP rights:

Sponsors may seek a license to intellectual property owned by the university but not developed with the company's support that may be required to practice inventions made during the sponsored project. For the most part, universities understand the request and appreciate that the sponsor desires to have access to all the intellectual property necessary to utilize any new inventions. However, this request, made before the nature of any invention is known, is difficult to grant. Without knowing the nature of an invention it is difficult to identify background intellectual property. Furthermore, background intellectual property may have been developed by other researchers on campus who are not benefiting from the research support or the technology may already have been licensed or otherwise obligated to a third party. If it is anticipated that background intellectual property may be used for the purposes of the sponsored research, identification of such background intellectual property and the sponsor's rights to it in the agreement may be very beneficial.

Best Practices:

As evidenced by the level of corporate funding of research in universities, many successful relationships between universities and industry have been implemented and many involve the parties reaching compromises regarding intellectual property that satisfy the requirements of both parties. The most common compromise has been that the university retains title in intellectual property made in the performance of industry-sponsored research, with certain rights in such property granted by license to the industry sponsor. The scope of the license may range from a nonexclusive, royalty-free right to use results for internal purposes to an exclusive royalty-bearing license for commercial applications. Although both parties would like to establish a one-size-fits-all boilerplate for intellectual property, no one "solution" fits all circumstances or all industry sponsors, so terms are negotiated on a case by case basis. (See [A Tutorial on Technology Transfer in U.S. Colleges and Universities; September, 2000; HTTP://WWW.COGR.EDU/FILES/PUBLICATIONS_INTELLECTUAL.CFM](http://www.cogr.edu/files/publications_intellectual.cfm)).

Confidentiality and Publication

At the core of the academic mission is the obligation to create and disseminate information. In addition, publication and recognition of the impact of publications are key factors in tenure decisions. Universities actively protect the ability of their faculty to publish the results of their research. In contrast, industry sponsors often may seek to delay or limit the publication of results to protect the company's proprietary position.

Again, compromises have been achieved that enable universities to disseminate knowledge, while satisfying the corporate sponsor's needs for competitive protection. A commonly-negotiated compromise provides the industry sponsor the opportunity to review and comment on a proposed manuscript in advance of publication but without editorial rights over the content of the publication. This permits the sponsor to identify any proprietary information provided by the company which is disclosed in the manuscript, or to delay publication for a specified period, e.g.,

60 days, in order to file patent applications before publication to avoid loss of U.S. or foreign patent rights.

Tax Issues

Many universities use tax-exempt bonds to finance the construction of buildings. Tax-exempt bonds are advantageous to investors because the interest paid on the bonds is exempt from income tax. Therefore, the interest on the amount borrowed is usually less and allows the university to construct buildings at reduced expense. As part of the Tax Reform Act of 1986, Congress provided that private business use of a facility financed by tax-exempt bonds invalidates the tax exempt status of the bond and therefore the interest would become subject to income tax. For most public institutions, the amount of private business use may not exceed 10% of the amount of the bond issuance; for institutions that are exempt under Section 501(c)(3) of the tax code, the limit is 5%.

Industry-sponsored research was among the activities identified in the Tax Reform Act as potential private business use. In 1997, the IRS issued a revenue procedure, Rev. Proc. 97-14, which establishes the conditions under which a research agreement would not result in private business use – a safe harbor. The conditions that provide a safe harbor for research sponsored by a single company are that the “license or other use of resulting technology by the sponsor is permitted only on the same terms as the recipient would permit that use by” any other person or entity. In other words, the sponsor must pay an arm’s length price for the use and such price should be determined at the time the technology is available for use. This Revenue Procedure was revised in 2007 (Rev. Proc. 2007-47) to clarify that the rights normally granted to the federal government under the Bayh-Dole Act for inventions made with federal support do not constitute private use.

From the university’s perspective, losing the tax-exempt status of a bond issuance would be disastrous. The university would be faced with either making the bond holders whole for the additional income tax on the bond’s interest or it would lose credibility in the bond market which would result in increasing cost for future bonds. To date, there have been no cases that establish how the provision will be applied. However, because of the added burden and complexity of accounting for the private business use attributed to research agreements for each building and bond issuance, many institutions try to negotiate provisions for the use of inventions which are consistent with the safe harbor. If an institution is contemplating operating outside the safe harbor, bond or tax counsel should be consulted.

From the perspective of some companies, the issue of private business use is an argument that is used by academia even when not appropriate. For example, if the research is occurring in a facility that has no tax-exempt bonding or whose bonding has been retired (paid off), the research occurring in that building is not subject to the private business use test. Industry commonly manages complex administrative activities and might argue that, if universities are genuine about cultivating industrial sponsors, they would resolve any private business use issues, and apply the concept only when necessary. However, it should also be recognized that due to refinancing strategies, there may indeed be very little facility space that is not affected by private use requirements.

Export Control

Export control regulations come into play when (a) restrictive publication or information access clauses requested by industry are included in university agreements; b) industry provides university researchers with proprietary information which is export controlled; and (c) specific export control agreement clauses predetermine that project results are export controlled.

Unless they have specific facilities in which to conduct controlled research, universities usually seek to conduct research under the fundamental research exclusions provided in U.S. export control laws. Both the State Department regulations (International Traffic in Arms Regulations --ITAR) and the Commerce Department regulations (Export Administration Regulations--EAR) address this. In addition, most universities have policies that prohibit accepting agreements that restrict publication or the access of foreign nationals to the project because accepting such conditions causes a university to operate outside of the fundamental research exclusions.

Corporations should be aware that, even if the research that they conduct is subject to export controls, the fundamental research component conducted at a university –even if part of collaborative research – is exempt under the export control regulations. Projects can and should be compartmentalized so that the ability of a university faculty member to publish is maintained. In the case of federal pass-through funding, corporations should understand this position and be prepared to negotiate with the government to get the appropriate exception to any restrictive publication clause in the prime contract. Both university and corporate contracting and program officials should be prepared to remind the government of the National Security Decision Directive 189 and the corresponding provisions in the export control regulations (so the parties can avoid unnecessary delays in collaborative projects). Corporations also need to understand that universities will often not be able to accept proprietary information that is export controlled and which is integral to the project as this proprietary information would not be covered by the exclusion from export controls for fundamental research. [for more information see [Export Controls and Universities: Information and Case Studies](http://www.cogr.edu/files/ExportControls.cfm)].

Material Transfer/Access to Materials

Research tools obtained from companies represent an opportunity for faculty and students to expand research, test new hypotheses, and to use novel, state-of-the-industry materials and methods. Formal material transfer agreements (MTAs) enable university laboratories to receive a company's proprietary material under a framework that details each party's rights and responsibilities in and to materials and tools, including the requirement that universities make any materials developed under NIH sponsorship broadly available to the research community.

Universities often have concerns about the terms that companies seek when providing a material to a university researcher. The company may view the research materials and tools as valuable company assets which were developed at great expense to the company. In this view these assets must be carefully controlled and protected under a company's obligation to its investors or shareholders. In addition, companies often have different classes of materials and research tools which have different criteria for access based on perceived value and the company's product development priorities. The flexibility of a company to negotiate rights for universities to use such materials is often directly tied to the value of the material for potential commercial

development. Thus, a university can expect a company to negotiate more aggressively with materials that are either part of a product development stream or are anticipated to be part of the stream.

Often the company has a standard material transfer agreement which contains expansive intellectual property ownership requirements and limitations on publication or dissemination of research results. Companies also expect to retain rights in any improvements or modification of their proprietary materials and, in certain cases, to improvements or inventions resulting from a university's use of such materials. If the materials will be used in research funded by the federal government, universities may be constrained, under federal law, from prospectively granting title in future developments, especially those that may be only peripherally related to the materials and/or research tools originally exchanged. They may also be constrained from agreeing to specific royalty terms before an invention has been created.

As with all company assets, the use of research tools and materials may be associated with legal risks to the company. Companies typically request that universities indemnify and hold them harmless for the actions or negligence of university faculty researchers in using such materials. However, these indemnification provisions may conflict with the state law of the recipient university. For all of these reasons, MTAs are often difficult agreements to negotiate, requiring scarce, specialized university resources for reviewing, negotiating and approving the agreements.

In response to growing concerns over the difficulty of arranging for material transfers, the National Institutes of Health (NIH) provided the research community with a set of guidelines for the exchange of research materials created and used in NIH-funded research and, as the result of a cooperative project involving the NIH and several universities, has provided two template documents; the Uniform Biological Material Transfer Agreement (UBMTA) and the Simple Letter Agreement, which it suggests be used for most routine transfers (http://www.autm.net/aboutTT/aboutTT_umbta.cfm). While the UBMTA and Simple Letter Agreement have provided an efficient, standardized mechanism for transfers within the academic community, neither has been accepted or used by industry partners. [see Materials Transfer in Academia; September 2003; http://www.cogr.edu/files/publications_intellectual.cfm].

VI. Other Viewpoints

There are many positive aspects to the collaborative relationships between universities and industries. As stated in the Guiding Principles for University-Industry Endeavors developed recently by the University Industry Demonstration Project under the auspices of the National Academies (<http://www.uidp.org/>),

“University-industry collaborations pair the discovery and dissemination of knowledge with the application of that knowledge to the creation of goods and services. Properly constructed, these collaborations ultimately endow society with a public good far exceeding the combined contributions of the parties: economic growth, an improved standard of living, an extension of humanity’s intellectual reach. In the broadest sense, the goal of university-industry collaborations should be to create this public good while simultaneously satisfying the mission and objectives of each partner.”

However, others have raised the caution flag questioning whether the increasing commercial interest on the part of universities is compromising their primary mission of creation,

preservation, and transmission of knowledge. For those who would like to more fully understand these concerns, the following books and articles are suggested:

- “Academic Values and the Lure of Profit,” Derek Bok, Chronicle of Higher Education, Vol. 49 (April 4, 2003). In this article Professor Bok, the former President of Harvard University, writes of “the predicament in which universities find themselves. Now more than ever, they have become the principal source of the three most important ingredients of progress in a modern, industrial society: expert knowledge, highly educated people, and scientific discoveries. At the same time -- in a depressed economy, with the federal budget heavily in deficit and state governments cutting investments in higher education -- campus officials are confronting a chronic shortage of money to satisfy the demands of students, faculty members, and other constituencies.
- As a result, university administrators are under great pressure to become more entrepreneurial. They feel compelled to search more aggressively for novel ways of making profits that can help meet pressing campus needs. Increasingly, one reads of new lucrative ventures launched by one university or another: medical-school consortia to test drugs for pharmaceutical companies; highly advertised executive courses to earn a tidy surplus for their business-school sponsors; alliances with venture capitalists to launch for-profit companies producing Internet courses for far-flung audiences.”
- Universities in the Marketplace: The Commercialization of Higher Education. Derek Bok, Princeton University Press (2003). For a more in-depth treatment of the theme of his Chronicle article, Professor Bok wrote a compelling book examining whether everything in a university is for sale and argues that universities must be vigilant to avoid compromising the primary mission and purpose of an academic institution.
- University, Inc! The Corporate Corruption of Higher Education. Jennifer Washburn, Basic Books ((2005) Jennifer Washburn, a Fellow at the New America Foundation, argues that universities are selling out to corporate sponsorship and that intellectual property is being transferred to industry in exchange for cash, stocks and other private benefits.
- A “Summit Meeting” on issues and concerns in the university—industry partnership was held in Washington, D.C. in April, 2006. For relevant materials see RE-ENGINEERING THE PARTNERSHIP: SUMMIT OF THE UNIVERSITY-INDUSTRY PARTNERSHIP (UIDP) at http://www7.nationalacademies.org/guirr/UIDP_Summit.html