
Research Contracts with Industry

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Types of Research Activities Engaged in by Industry

Most countries acknowledge a symbiotic relationship between investment in science and technology and success in the marketplace. Science and technology are essential for countries to remain competitive in international trade and to attain commercial success in the global marketplace. At any given time, these same governments are usually striving to support industries seen as high-technology (science-based industries whose products involve above-average levels of R&D). However, every industry provides opportunity for research activity. The most mundane activities are often the most ripe for research advances.

Enabling Technologies

Much of industrial research is aimed at development of *enabling technology*—technology that enhances the creation and delivery processes of products and services. While industry conducts much of this research itself, it also relies on the use of engineering firms and engineering-oriented academic institutions.

Educational institutions are often the source of the ideas and fundamental research surrounding new and existing enabling technologies. Industrial research organizations are involved most often at the technology development stage because development of these technologies is often of relatively high cost for any one company, and sometimes hard to justify when compared to

shorter-term company product goals. Many times the final stages of this kind of research are conducted internally, because of competitive issues that arise with the intellectual property being developed.

Problem-Solving

Universities and nonprofit research organizations are seen by industry as a problem-solving resource. Many collaborative efforts are initiated by industry for a specific purpose to help with a step in a process that is not working, is not efficient, or is affecting the quality of the product. Most often, this type of project is initiated by a company contacting the organization based on “word-of-mouth” relationships established by faculty members with industry personnel.

Developing Value-Added Technologies

Many times it is the academic or nonprofit organization or individual who approaches industry. This happens most often with “value-added” research activity. Value-added technologies are anything that can be added to an existing product that allows industry to charge more for that product. Examples include “bioceuticals” (i.e., foods with pharmaceutical properties), materials research that may transform commodities or waste into more valuable products, and “nanotechnology” projects that seek to develop molecular-sized machines.

In certain technological areas such research is often welcomed by industry. Individual companies

welcome the approach by universities and non-profit organizations with ideas to sponsor value-added research. In other industries there is a reluctance to use outside resources, although the various companies may well conduct value-added research within the company.

International Trends in Industrial R&D

In high-wage countries such as the United States, industries stay competitive through innovation. Innovation leads to better production processes and higher quality products, thereby providing the competitive advantage high-wage countries need when competing against low-wage nations. R&D activities serve as incubators for the new ideas that can lead to new products, processes, and industries.

Industries that traditionally conduct large amounts of R&D have met with greater success than those that are less R&D intensive. The United States, the European Union (EU), and Japan represent the three largest economies in the industrialized world and are competitors in the international marketplace. These countries and regions are serving as the model for other countries moving from a manufacturing focus to the "post-industrial" economy. However, each has approached research in somewhat different ways.

United States

R&D performance by the US service-sector industries (i.e., contract research organizations and academic and nonprofit organizations providing services to industry) underwent explosive growth in the last decades of the 20th century, driven primarily by computer software firms and firms performing R&D on a contract basis. The US aerospace industry performed the largest amount of R&D in the late 1980s. During the mid-1990s, however, the nation's R&D emphasis shifted; the aerospace industry's share declined, and the share for the industry manufacturing communications equipment increased. At the end of the century, the communications and other electronics equipment industry was the top R&D sector in the United States. As the new century began, there was a further shift to biotechnology and an apparent push into materials science and "nanotechnology." In each case, government encouraged the research emphasis, but the research was primarily a matter of private capital investment.

Japan

Unlike the United States, Japan has not traditionally used service providers for R&D. Japan's industrial

R&D performance continues to be dominated by the individual manufacturers conducting the work internally. This reflects that country's long-standing emphasis on electronics technology (including consumer electronics and audiovisual equipment), motor vehicles, and electrical machinery. However, Japanese companies have begun to exhibit an interest in acquiring technology from academic institutions in the United States and elsewhere.

European Union

As in Japan and the United States, manufacturing industries perform the bulk of industrial R&D in the 15-nation EU. The EU's industrial R&D appears to be somewhat less concentrated than that in the United States but more so than that in Japan. Large increases in R&D performed by service providers are apparent in many EU countries, but especially in the United Kingdom, Italy, and France. In keeping with their histories, much of the research is performed in collaboration with government institutions.

The Industry and University Research Model

In the United States, and increasingly in the other advanced economies, the industry/university agreement has emerged as a model for effective and cost-efficient research. In biology, chemistry, computer science, and even education and psychology, the lure of increased research support has tempted the "ivory tower" to come to the marketplace while the potential for "revolutionary" profits has brought the entrepreneur to academia's ivy-covered halls. The resulting, sometimes prickly, collaboration has driven waves of innovation that in turn have driven the economy of the United States and the world. Several versions of research support have been developed to accomplish the varying objectives of the funding corporations while satisfying the academic purposes of the universities and other non-profit institutions.

There is a continuous examination of the roles of the different sectors in the overall R&D enterprise by both academics, the government, and by the sectors themselves. Many of the earlier relationships that stressed "contract research"—even when applied within the confines of a single corporate entity—can be expected to continue in a classical mode. However, a greater emphasis has been placed on strategic alliances or "partnering," even across corporate lines during the last decades.

Choosing the Type of Agreement

The types of agreements that may exist between industry and university fall into the broad categories of:

- Philanthropy.
- Agreements with individuals.
- Agreements with university for university research.
- Contracts for supplies and services in support of research activities.
- Agreements for exploitation of research findings.

There is often a blurring between the categories. For instance, a company may enter into a contract for research and simultaneously make a grant of equipment, facilities, or other property to a university. Similarly, many research agreements include license provisions relating to commercial exploitation of any resulting research findings.

The reasons for undertaking any one type of agreement differ for universities and industry. Further, statutory and policy considerations affect the direction in which a given company or university may go. For instance, many universities have defined generally the types of research for which they will accept funding. Typically, universities are not interested in accepting research that is too routine in nature (basically, as service function) or that is so narrow in scope as to limit basic scientific endeavors, the primary thrust of university research. Also, some universities have refused to accept funding for certain projects related to the defense industry, for example, chemical or biological warfare research.

Some corporations require that universities utilize their equipment in conducting research for

them. Acceptance of such a stipulation could be both counter to the university's philosophy and also be very expensive. For instance, assume that a university accepts a research contract from the XYZ Computer Corporation for the development of a new type of microchip. The contract includes a clause requiring that all computer equipment purchased on the contract be XYZ equipment. Several of the university researchers involved feel strongly that ABC Co. equipment is more appropriate for several applications. Also, the university has a major investment in computer equipment that is not compatible with the XYZ equipment. Thus, acceptance of the contract would result in the university's acquiring equipment that is not optimal for the task, is not compatible with the university's equipment of choice, and would require a rather expensive maintenance outlay after the conclusion of the contract.

However, aside from these kinds of issues, the choice of agreement should be a matter of purpose. A basic decision matrix can be developed to help negotiators and administrators make a choice as to the form of agreement most appropriate to a given joint endeavor.

The selection of the form of agreement is not an issue faced solely in industry-university relations. The United States Federal Grant and Cooperative Agreement Act makes the purpose of the agreement the deciding factor in the selection of a particular form of agreement. The distinctions made in that Act are useful in the private arena as well. The government looks first at the primary beneficiary. If the purpose of the agreement is to fulfill a societal need or to advance the basic level of knowledge, an assistance document is used. If the purpose of the agreement is to acquire goods or services (including the

TABLE 34-1 Matrix of Agreement Types

Factor/Situation	Type of Agreement
Specific research objective to be accomplished by one party for other party's use	Research contract
Guidance or advice needed from one party for other party to proceed with in-house project	Consulting agreement
Supplies or services needed to support research effort	Contract/subcontract
Joint effort to conduct on-going research	Partnership
Joint effort to conduct on-going research where passive investors will be involved	Limited partnership
Joint effort to undertake specific research project	Joint venture
Research of research by one party to be used by other party	License agreement

knowledge necessary to produce goods or services) then a contractual instrument is used. Within the assistance area a further distinction is drawn. If no continuing relationship is intended, the instrument of choice is the grant. Where facilities, personnel, or other results will be shared or where the sponsor will exercise continuing involvement in the project, the Act calls for a cooperative agreement.

For industry-university agreements, the category of contractual agreements can be further subdivided. When the purpose of the agreement is a one-time end result, a research contract is appropriate. When the purpose instead is the overall development and commercialization of a research endeavor, the research partnership or a consulting agreement is likely to be the vehicle.

Under any of the primary agreements, two contractual actions are common. For completed research to be properly exploited, license agreements may be needed. And, of course, both the corporation and the university often enter into purchase agreements and subcontracts for goods and services.

Areas of the Law Affecting Research Contracts

Practitioners handling industry/university and other private research contracts must be familiar with a broad range of legal issues, most importantly, the basics of contract law. However, the research administrator must also be familiar with the law related to business entities. For instance, a partnership is a contract between business owners. Similarly, the research administrator must have some understanding of intellectual property and licensing laws (a license agreement is a contract to use certain property). Since the institution may face claims based on product liability, malpractice, or environmental abuse, the research manager must be aware of these legal arenas. The drafter and administrator of a research contract may deal with issues from bankruptcy to torts and from choice of law to warranty. This text cannot begin to provide the legal underpinnings for a contract negotiator working with complex agreements. While this section identifies the areas that require study, a competent research manager will assure that he or she has access to competent counsel.

The primary areas of the law to be concerned with in negotiating research contracts include:

- Basic contract law.
- Agency.

- Business organizations (corporate and partnership law).
- Negligence-product liability and insurance law.
- Intellectual property law.
- Public contract law and administrative procedures.
- Bankruptcy.
- Anti-trust.
- Civil procedure.

The clauses of even a simple contract for research services are molded by the complex interplay of each legal area listed above. These legal areas dictate the particular clauses to be used, the rights of the contracting parties and others under those clauses, the role of governmental entities in private contracts, and the value of the end results to the contracting parties.

Types of Contractual Agreements

One reason so many areas of the law apply to contracts is that there are many types of contractual agreements. As discussed earlier, consulting agreements, partnerships, subcontracts, and purchase orders for supplies all fall into this category. The common element in each is a reasonably specific purpose and the concept of mutuality of enforceable promises. The particular aspects of the arrangement then dictate the form of agreement most appropriate.

Anatomy of Research Contracts

A review of the literature concerning industry-university research indicates a set of very common problems faced in almost every research field. These problems arise because the organizations have different goals, different "cultures," and different governing rules. Many of the problems arise, however, simply because one party is paying and the other is performing. These problems as well as the institutional variations must be addressed if successful agreements are to be reached.

Tradition and function dictate a somewhat standardized format for research contracts. This is not a matter of style or convention. Research (and other) contracts tend to look alike because the same topics must be covered.

Every contract should include provisions concerning the following:

- Identification of the parties.
- Work to be done or property to be transferred.
- Period of performance.
- Consideration/financial arrangement.

- Control of the work/interface provisions.
- Use of other party's property, name, data, (including patents), etc.
- Extra-contractual liability (including issues relating to insurance and to third parties).
- Provisions relating to disputes resolution.

If a central topic is not covered, the parties run the risk of a court inserting language into the agreement to cover the issue or even declaring the agreement to be null. In many cases, there may be statutory or case-derived "language" that will be applied to "fill the gap" in a contract that does not cover a particular topic. On the other hand, the parties may well want to incorporate such language, or they may intentionally not cover a subject that is unlikely to become the subject of dispute.

The contract may well include additional provisions covering a multitude of other topics, but the topics set out above are what define the species within the contract genus. In addition, many contracts include "recitals" or statements of intent and explanation. These, however, do not usually have the legal force of actual contract clauses.

Some of the contract clauses to be used in each section are discussed below. However, it is imperative that research administrators remember that the protocol or statement of work to be done is a part of the contract even when it is "incorporated by reference" (stated to be included even though it is not physically inserted). If a contract has been chosen as the form of agreement, the statement of work should be reasonably precise. If broad exploratory research with no firm objective is being funded, an assistance document might be the better vehicle of agreement.

The particular issues to be addressed in a work statement will vary with the nature, purpose, size, and complexity of the work to be performed. At a minimum, however, every work statement should:

- Give a precise statement of objectives.
- Identify the work to be performed.
- Set parameters by which the desired scope of work can be defined and by which progress and results can be measured.
- Require some defined "end product" and some tangible form of progress/compliance reporting.

A work statement for a level-of-effort type requirement should specify:

- Kind of personnel (labor categories) required to perform the work and any qualification requirements (e.g., education, experience, and certification).
- Nature of work.

- Required deliverables.

In writing the final version of the statement, elements may need to be combined or rearranged in individual sections to fit particular circumstances. The main objective should be to arrange and present the elements in a manner that:

- Is logical and readable.
- Emphasizes the most important elements.
- Conveys exactly what is required of the contractor.

Special Types of Contracts

While consulting agreements, partnerships and joint ventures, and license agreements all conform to the basic anatomy of contract, each has special attributes related to the peculiar nature of the relationship that is created. These attributes may involve additional sections or particular "twists" to the basic contractual language.

Agreements with Individuals

Most commonly, agreements with individuals are consulting arrangements. However, such agreements might also arise when a university needs advice on the organization of a research foundation or on the tax consequences of a proposed research partnership. In any of these or other agreements with individuals, the basic contractual structure may be modified substantially because of the problem of avoiding the creation of an employment situation. Employers and employees are subject to a series of tax and work protection laws. While these laws are not meant to apply to independent consultants, companies and individuals have repeatedly tried to use the consulting arrangement to avoid withholding, overtime, or unemployment compensation requirements. As a result, legislators and regulators in the United States and elsewhere have defined employment in the broadest possible way, making even legitimate consulting arrangements more difficult to establish.

The difficulty is compounded by governmental or university restrictions on noncivil service employment for government employees or university faculty, by government conflict of interest restrictions, and by the objective held by many companies to assure the "loyalty" of consultants. To address these problems, the drafter of a consulting agreement should include specific language, crafted in light of governmental labor laws (and

conflict provisions, where applicable) that preserves the independent status of the consultant (see, in particular, for the United States, Section 1706 of the Tax Reform Act of 1986).

Partnerships and Consortia

Organizations of all sizes and all around the world conduct research activities through partnerships, collaborations, and outsourcing. Many organizations will pursue multiple relationships, each for a specific technological or business goal. These relationships have had many names:

1. **Alliance.** A generally long-term agreement between two or more organizations to cooperate in the development of future products and technologies. Members are generally all within the same industry. This relationship provides for a mutually planned approach to solving a specific technical problem or sets of problems. An alliance is not a defined legal entity, *per se*, but alliances are often structured as a partnership or joint venture.
2. **Strategic alliance.** Collaboration between two or more organizations designed to achieve some specific corporate objective. This relationship is usually structured as a partnership, but may also include international licensing agreements, management contracts, or joint ventures.
3. **Collaboration.** Generally two organizations, not necessarily with common products or technologies, that agree to cooperate to develop a new product through the combination of mutually complementary expertise. Both organizations share in the profits of the resulting products.
4. **Consortium.** A group of organizations with generally common products who cooperate and share resources in order to achieve a common objective. The US National Science Foundation defines these as "partnerships of multiple institutions, which can be academic and/or nonprofit, which are formed for the expressed purpose of carrying out research activities."
5. **Cooperative.** A form of collaboration in which two or more, usually nonprofit, organizations join forces, primarily for cost-sharing benefits.
6. **CRADA (Cooperative Research And Development Agreement):** An agreement formed typically between two government agencies or one government agency and a private corporation or university to develop a specific set of technologies or prototype products.
7. **Joint venture.** An agreement between two or more organizations to undertake the same busi-

ness strategy and plan of action. Joint ventures may be structured as partnerships, co-owned corporate bodies, or other forms of business collaborations.

8. **Outsourcing relationship.** A situation where one party sends out (work, for example) to an outside provider, usually to cut costs. Basically contracting for research, but also often for research management.
9. **Partnership.** Business relationships in which two or more organizations carry on a business together with a shared ownership. Partners are each fully liable for all the debts of the enterprise, but they also share the profits exclusively.
10. **R&D limited partnership.** A partnership whose investors put up money to finance new product R&D in return for profits generated from the products. The investors are said to have limited liability in that they have a limitation of loss to what has already been invested. Other legal variations include a general partnership and a master limited partnership. General partners have unlimited liabilities for the obligations of the partnership. A general partnership is a partnership in which all participants are general partners.

R&D limited partnerships and limited liability companies are often vehicles for funding research while obtaining tax benefits. Investors provide the funds, a research institution gets the funding to do major projects, and new products and processes tumble out without a company being forced to mortgage its assets for an uncertain future. Similarly, governmental economic development entities and entrepreneurial university managers often establish consortia to join multiple research institutions with complementary capabilities that may attract additional research funds not available to any of the individual organizations. Sometimes universities or nonprofits are even members of joint ventures.

The R&D limited partnership scenario sounds perfect for industry-university cooperation; however, the actual story is a bit more complicated. All of these conjoined entities are partnerships of one sort or another. However, partnership law is complex, tax law (which is a primary consideration in R&D partnerships) is horrendously complex, and securities law (i.e., the law dealing with the ownership of fractional interest in the conjoined entities) is a Gordian knot made of hardened steel cable. To a great extent, partnership law derives from agency law. Each partner is considered an agent of every other partner. Thus, the agency concepts of imputed knowledge and responsibility for acts done within the scope of the partnership relationship will apply.

Partnership law is distinct from agency law in an important way. A partnership is based upon a voluntary contract between two or more competent persons who agree to place some or all of their money, effects, labor, and skill in business with the understanding that there will be a proportional sharing of the profits and losses among them. An agent can be compensated from business profits but does not agree to bear the ordinary business losses and has no ownership interest in the business.

In the past, attempts to formulate a concrete definition of the term partnership have caused endless controversy among judges, lawyers, and members of the business community. Partnership is defined by the Uniform Partnership Act (passed by most states) as "an association of two or more persons to carry on as co-owners a business for profit." Therefore, two essential elements of a partnership are (1) a common ownership interest in a business and (2) sharing profits and losses of the business. (University administrators may cringe at this, seeing challenges to the university's tax exempt status if it enters into such a relationship.¹)

R&D partnerships are often a special kind of organization called a limited partnership. The limited partnership is a creature of statute. Most states in the United States have adopted some form of the Uniform Limited Partnership Act (UPLA), which codifies the law of limited partnerships. Limited partnerships are frequently used in the context of commercial investment. A person willing to purchase the financial interest in a business might not want any management responsibility or personal liability for partnership debts. The limited partnership form meets this need since only the general partner(s) must have unlimited liability. In this case, the general partner assumes management responsibility of the partnership and takes full personal liability for all its debts. A limited partner contributes cash (or other property) and owns an interest in the firm but undertakes no management responsibilities and is not personally liable for partnership debts beyond the amount of his or her investment.

Finally, to the extent that a wide range of limited partner investors will be solicited, state and federal securities laws may apply and will produce an exponential increase in complexity. A recent "simple," publicly traded R&D partnership has been reported to have taken over a year to structure, with several very high-priced lawyers and accountants working on the deal continuously.

This is not to say that a university or nonprofit may not undertake research work using the partnership format. Outside the tax-based R&D part-

nership arena, partnerships are a common form of business organization. They are long-term working relationships built on mutual trust and commitment between partners with complementary capabilities and shared goals and risks. Partnerships serve to achieve goals that may be difficult or impossible for either party to accomplish alone.

Research Consortia

A common form of partnership seen in the academic research environment is the research consortium. Consortia may also be structured as separate corporate entities and sometimes as loose alliances with only contractual arrangements to serve as the structural framework.

Research consortia could take the form of public-public arrangements (government agencies and public providers), private-public partnerships, or a private-private consortium. Research consortia come together around a wide and diverse range of issues and take many different forms:

- Focused around a single industry sector on common user needs.
- Involving research and technology cutting across sectors.
- Involving discrete joint ventures within an industry or supply chain.

Research consortia are often focused on achieving tangible and specific objectives. These include new platforms leading to new products, services, or processes, or solving focused and difficult research problems needed to transform existing services, products and processes. There are, for example, consortia related to nanotechnology, waste disposal, marine mammals, and structural genomics, to name only a very few. Each of these is a unique entity, with its own structure, defining and controlling documentation, and membership.

Most consortia have a single governance entity, which could be a separate company (with its own management structure), a partnership management committee, a joint venture (again with multiple forms possible), or a cooperative. Whatever the consortium's legal structure, the governance entity needs to:

- Enable user-leadership in setting and managing evolving research directions.
- Sufficiently bind the collaborating parties around the achievement of the consortia objectives.
- Manage the necessary adjustments and realignments of research effort and priorities between the parties as circumstances change.

- Provide an intellectual property policy that encourages innovation by collaborating parties, promotes research use or commercialization, and protects the individual members' separate interests.
- Create the management disciplines and capabilities needed to monitor and enforce performance by the members and by third parties with whom the consortia interact.

The most important issue to be addressed in establishing a consortium is the allocation of control (e.g., voting rights) over the consortium. This should be carefully documented in the organizing documents, along with a mechanism for altering the control at later stages. The initial organizing documents are the "constitution" on which the consortium government is based.

Additionally, consortium agreements must provide for management of research priorities between consortium parties as circumstances change and establish the role of the consortium in negotiating with third parties, managing individual research contracts, and coordinating commercialization and technology management.

Organizations establishing consortia need to establish just how much freedom the consortium will have to take risks and redirect research as circumstances change in order to achieve the consortium objectives. Consortium partners should identify the research priorities and projects and programs for which the consortium will have responsibility. They will need to determine if the consortia will act as an agent for the members, working within specified principles and parameters, or if the consortium will be more of a clearinghouse, simply transferring work and results among the members and third parties?

Consortia should have either wind-up or grow strategies, or have critical milestone points where exit or growth may be evaluated. Exit may include attracting venture capital for commercialization or even stock market listing. Consortia might instead wind themselves up following the spin-off of new ventures or transfer of the research results to the members or to third parties. An Intellectual Property (IP) agreement should be agreed upon between consortium parties before the venture begins. This should detail the IP that each party brings with them, who will own the IP that arises, and what access rights the parties will have. It should reflect the inputs, contributions, and risks of each party. The consortium should have a method for evaluation against milestones and objectives. Methods include:

- Audit assurance that governance and management systems are in place and operating appropriately.
- Financial and progress reviews.
- Full outcome evaluation of objectives achieved by the funding or participating members or users.

Having review points at specific points during the planned consortium life provides the opportunity for parties in a consortium to reassess funding needs and directions. The consortia agreement should fully discuss the amounts and nature of investments and contributors. Members may contribute investment funds, staff effort and time, and existing IP. In other cases, time and effort and IP may be provided in return for compensation. This should be clearly delineated in advance.

Joint Ventures

In some cases, joint ventures provide the best partner-like form of business activity. Joint ventures are used in a wide variety of manufacturing, mining, and service industries and frequently also involve technology licensing (discussed below) by one or more of the parties to the joint venture. In the business world, the term joint venture usually relates to an organizational format where companies come together to pool their resources and expertise to pursue common opportunities.

While often established as a partnership, it is increasingly common to see joint venture corporations. That is an activity that includes the creation of a new organization to further specific ends of two or more organizations. Partner organizations share governance of the new organization. For example, organizations might initiate a joint venture whose mission is to develop and service software developed by one organization which is to be sold by another organization with access to distribution channels. The partners would name agents/designees to sit on the joint venture corporation's board, and perhaps would even name the individual officers.

For international deals, the host country's laws may require that a certain percentage (often 51 percent or more) of a business activity be owned by nationals of that country, thereby limiting the ability of a foreign entity to operate independently. In addition to such legal requirements, research institutions, and even commercial firms, may find it desirable to enter into a joint venture with a foreign firm to help spread the high costs and risks fre-

quently associated with foreign operations or a newly developed technology. The partners in a joint venture normally bring to the joint venture their knowledge of the technology, manufacturing, perhaps a distribution network, and valuable business and political contacts. For international deals, a joint venture with a local partner may also lessen the "foreigner" image of the outside institution or company, and thus may provide some protection against discrimination or expropriation if conditions change.

The obvious disadvantage to using joint ventures is the loss of effective managerial control. This can result in reduced profits, increased operating costs, inferior product quality, exposure to product liability, and environmental litigation and fines. The issue of control and governance will be normally the most important topic in negotiations with the prospective joint venture partner. Joint ventures can raise anti-trust issues in certain circumstances, particularly when the prospective joint venture partners are major existing or potential competitors in the affected national markets.

Alliances and Strategic Alliances

The terms "alliance" or "strategic alliance" are widely-used but loosely-defined terms that encompass a wide range of collaborative business activities. Alliances may take any number of forms, including equity investments, exclusive supply arrangements, joint research and development, joint production, joint purchasing, and joint marketing through copromotion, cobranding, and other similar arrangements. Strategic alliance has been broadly defined as including "any form of inter-firm cooperative arrangement beyond contracts completed in the ordinary course of business."² Alliances have become increasingly popular. This is, to some extent, because of the flexible and often not fully defined nature of the term. Organizations are often parties to multiple alliances, of many different sorts. Several factors have contributed to this proliferation of more or less structured alliances.³

These include:

- *Globalization.* Well-positioned local firms, different cost structures, local customs and preferences, restrictive national laws, and the sheer complexity of global operations make it difficult for individual firms to operate alone.
- *Specialization.* At the same time as the economies of scale and scope increase, firms are recognizing the difficulty with trying to do

everything alone. This is the impetus for outsourcing and for creating alliances with the outsourcing activity.

- *Technical complexity.* Many key technologies have grown so complex that companies look for partners who can provide the expertise they themselves lack.
- *Pace of technological change.* R&D alliances respond to rapidly changing markets, flexible enough to adapt to changing market conditions, with comparatively low entry and exit costs.
- *Network effects.* In technology-driven markets, the network effects make it critical that a firm capture the first mover advantage so that its technology becomes the industry standard. Alliances between new technology firms and established manufacturers are often used as a way to get off the starting block more quickly in order to capture these network effects.

All of these forces drive organizations to rely on other firms to perform functions that are critical to their success or failure. This, in turn, confronts them with all the problems Oliver Williamson identified in his groundbreaking work on transactions costs, notably, on bounded rationality and opportunism.⁴

Firms are naturally reluctant to make investments specific to arms-length transactions with another firm because the other firm may become opportunistic and try to capture all of the gains from that investment. The combination of opportunism and bounded rationality makes arms-length contracting inefficient. Alliances can reduce transaction costs among firms by aligning the organizations and interests.⁵

This may be accomplished through exclusivity and reciprocity agreements, through joint ownership of productive assets, or through equity investments in each other and through governance structures that coordinate some or all of the activities of the individual members of the alliance.

Alliances are usually distinguished from joint ventures and partnerships by the continuing independence of the partners. Often an alliance provides for the acquisition of a minority, noncontrolling investment by one of the parties in their alliance partner, together with some sort of undertaking to work on a cooperative basis in a particular area. The alliance normally allows the parties to independently pursue interests outside of the alliance. However, even the most informal strategic alliances differ from regular contracts because the partners make some attempt to align their longer-term interests.

Alliances may also act as a mechanism for transferring technology and even the skills and rela-

tionships of employees within participating members of the alliance. They generally involve swaps, trades, or barter, rather than the exchange of goods and/or services for money. Each party has something the other wants, involving either tangible or intangible assets.

As with joint ventures, alliances almost always involve the loss of some managerial control. Alliances also can raise antitrust issues, particularly when the prospective alliance members are competitors or when there is an effective "integration" of the market, beyond that which is considered reasonable.

Outsourcing of R&D

Outsourcing, or transferring an entire function to another organization, has been common for many years, with much of this activity directed toward individual departments within an organization or individual projects conducted by an institution or company. Since the 1990s, the practice has become much more widespread, covering a broader range of activities, a growing set of partners, and usually, relationships that are longer term.

Sporadic case-by-case outsourcing is being replaced by more intimate partnering, even to the point where major industrial concerns will essentially turn over the entire R&D process to an external performer or research management institution. In many cases there is a close collaboration between the industrial concern and the research management organization to the point where the research management activity becomes involved in the internal R&D planning process. The arrangements tend to incorporate aspects of the alliance or joint venture, the stand-alone research contract, and the license agreement.

License Agreements

When technology is sold or assigned, the ownership rights for the technology pass from seller to buyer. Much more often, however, only the right to use technology is passed from the technology owner to the licensor to the user to the licensee. The manner in which the technology will be used, for how long, and in what region or area will be determined by the terms negotiated in the licensing agreement. Unlike a sale, the licensor continues to own the technology and may maintain some control over further development, manufacture, sales, and use. The licensor in many cases may even license the technology to additional licensees. In some ways a licensing agreement is like a partnership because it establishes a continuing relationship, and usually the licensor and licensee work together to maximize

their mutual profit. Assuming that the relationship is successful, both parties will profit from the product's success in the market.

Licensing agreements often enable nonprofits to profit from technology developed by them, and pose fewer financial and legal risks than owning and operating a manufacturing facility or participating in a partnership or joint venture with a for-profit company. Licensing also permits firms and nonprofits to overcome many of the barriers that frequently hamper international exploitation of technology. Technology licensing can also be used to deal with multiple holders of complementary technology. Organizations can use licenses such as cross-licensing agreements (or grant back clauses in licenses) to transfer rights to improved technology developed by a licensee back to the licensor.

One negative aspect of licensing is that control over the technology is lessened when it has been transferred to an unaffiliated firm. That firm may not use the technology properly, may not pay over the payments (royalties) due to the licensor, and may avoid payment completely through the use of the bankruptcy laws of the licensee's jurisdiction. Additionally, licensing usually produces fewer profits than actually manufacturing the actual goods or services. There also may be problems in adequately protecting the licensed technology from unauthorized use by third parties. Licensees may use the licensed technology to compete with the licensor or its other licensees. In international transactions, it is important to investigate not only the prospective licensee but both the licensor's and the licensee's countries as well. The government of the host country often must approve the licensing agreement before it goes into effect. Some governments prohibit royalty payments that exceed a certain rate. In many cases, particular technologies may be subject to restrictions on licensing in any form.

The prospective licensing parties must always take into account that both countries have:

- Patent, trademark, and copyright laws.
- Exchange controls.
- Product liability laws.
- Possible countertrading or barter requirements.
- Antitrust and tax laws.
- Government attitudes toward repatriation of royalties and dividends.
- The existence of a tax treaty or bilateral investment treaty.

Licensing parties always need to consider whether there are any issues concerning the unlaw-

ful restraint of trade (i.e., antitrust) that will arise from the license agreement. Some restraints may be *per se* unreasonable (for instance, patent licenses that extend beyond the life of the patent). Most of the time, the issue is whether any restraint on free use of the technology is reasonable. Whether or not a restraint is reasonable is a fact-specific determination that is made after consideration of the availability of:

- Competing goods or technology.
- Market shares.
- Barriers to entry.
- The business justifications for and the duration of contractual restraints.
- Valid patents, trademarks, and copyrights.

The United States and other countries, particularly the European Union, have strict antitrust laws that affect technology licensing. The European Union has issued detailed regulations known as a block exemption, governing patent and know-how licensing agreements, as well as ancillary provisions relating to other intellectual property rights.*

Just as partnership law involves agency and contract law, the law of license agreements also intertwines contract law with the law of "intellectual property." This thorny issue must be addressed if technology transfer is to occur.

Additionally, persons dealing with license agreements must be concerned with the Uniform Commercial Code. Changes in this model law may drastically affect the transactions in information products, including copyrighted works, databases, and computer software. The Uniform Commercial Code is a model act drafted by committees of attorneys associated with the American Law Institute (ALI) and the National Conference of Commissioners on Uniform State Laws (NCCUSL). Those organizations, acting together, propose to the states the model for implementation of a "virtual" national law on various aspects of commercial transactions. Adopting a model law helps to facilitate interstate commerce because all parties across the many jurisdictions can be confident that they are operating under a similar body of law.

The various players in the Uniform Laws bureaucracy began with an effort to standardize software licenses. However, the effort has expanded and contracted over time to cover more or less of the law

*Commission Regulation (EC) No. 240/96 of 31 January 1997 on the Application of Article 85(3) of the Treaty [of Rome]

of licensing generally. At present, only a few states have adopted any part of the Uniform Law, but students should maintain an awareness of this effort.

Licensing agreements cover as many elements as the parties wish. The payment structure (the form and rate of royalty, time frame, and incentives for maximizing profits), geographical area in which the licensee may operate, exclusivity of licensee, rights to improvements to the technology, etc., are among many factors that should be discussed. Because the license agreement may cover many kinds of intellectual property, deal with many different uses, and entail almost limitless types of relationships, the variation among agreements is practically infinite. The parties will need to work through checklists and previously drafted agreements to help identify necessary coverage in their particular situation. Some of the topics to be covered are discussed below.

The parties will need to discuss what is licensed. The subject of the license might be discoveries, concepts, or ideas, whether or not patentable, processes, methods, software, tangible research products, formulas and techniques, improvements thereto, and know-how. Copyrighted works, trademarks and trade Dress, derivatives, and background rights may be licensed, as can parking spaces, air rights, and waste disposal sites. Essentially, any kind of property that could be transferred by one party to another can be licensed instead.

What rights are gained and given by the license? Licenses normally cover not only existing rights, but also previously discovered or developed property or rights. Often licenses also cover rights to discoveries or works not yet developed. The licenses may preserve certain preexisting interests in intellectual property as unaffected by the activities to be carried out under terms of the agreement.

Intellectual Property Basics⁶

Intellectual property (IP) is a concept encompassing all forms of creativity that are protected either under statutes or by common law. It includes inventions, discoveries, know-how, show-how, processes, unique materials, copyrightable works, original data, and other creative or artistic works. IP also includes the physical embodiment of intellectual effort. For example, IP can sometimes include the actual models, machines, devices, apparatus, instrumentation, circuits, computer programs and visualizations, biological materials, chemicals, other

compositions of matter, plans, and records of research. Some IP is protected by statute or legislation, such as patent, copyright, trademark, service mark, or mask work, or by plant variety protection certificate and confidentiality agreements. Often a specific technology is protected using multiple mechanisms. For example, some computer software can be protected by copyright, patent, trade secret, trademark, and contracts.

Ownership of Intellectual Property

Ownership of intellectual property arises as a question with research in three ways. The first is the nature of ownership between the researcher and his or her employer, the second is between the research institution and the external funding body, and the third is in relation to a student's intellectual property. In many countries, the employer is given statutory ownership of the IP developed by employees. In the United States, there is a distinction made between patent ownership, and the ownership of copyrights and other intellectual property under the various statutes. Because of the variations in law, almost every organization developing IP has established policies and contractual understandings to control ownership. Under these policies and contracts:

1. the employer owns those inventions created by its employees and consultants;
2. nonacademic employers own copyrights and other IP created by its employees, but academic employers often allow academics such as professors and researchers to own copyrights in scientific materials meant for publication;
3. IP developed outside the employment relationship but used in the conduct of employment is often subject to noncompensated license or even assignment to the employer;
4. employees are often provided with compensation for IP, such as a share of income obtained by the employer; however, in most for-profit situations, this compensation may be minimal.

IP Created by Independent Contractors

Consultants, subcontractors, and other independent contractors often create a wide variety of original or new materials for research institutions and for other research sponsors. The IP created ranges from actual research results, prototypes, and research material to ancillary materials such as

business plans, marketing plans, training manuals, information manuals, technical guides, software, a Web site, designs, drawings, research reports, databases, and even trademarks and logos.

Inventions

In most countries, an independent contractor hired to develop a new product or process owns all rights to the invention unless specifically stated otherwise. This means that unless the contractor has a written agreement assigning the invention to the funding organization (whether sponsor or prime contractor/principal research institution), in general the funding organization will have no ownership rights in what is developed, even though it paid for the development.

Copyright

In most countries, a freelance creator owns the copyright unless a written agreement is executed providing that the material created is to be a "work for hire." If, and only if, there is such a written agreement in place, then the entity that commissioned the job will normally own the intellectual property; even then, the "moral rights" usually remain in principle with the author. In the absence of such an agreement, the entity that paid for the work is generally entitled to use the work only for the purposes for which it was created. Different rules or exceptions may apply, such as in the case of commissioned photographs, films, and sound recordings.

Industrial Designs

If a freelance designer is contracted to produce a specific design, in many cases the intellectual property rights will not pass automatically to the commissioning party, but will remain with the freelance designer. In some countries, the commissioning party owns the rights in a design only if reward has been paid for that design.

The Bayh-Dole Act

In the United States, ownership may be statutorily established to be held by the independent contractor by a law called the Bayh-Dole Act.⁷ Passed in the 1980s, the Act permitted universities and small businesses to elect ownership of inventions made under federal funding and to become directly involved in the commercialization process. This

new policy also permitted exclusive licensing of the inventions.

The Act applies to all inventions conceived or first actually reduced to practice in the performance of a project that is fully or partially funded by a federal agency. In almost every case, ownership of IP between employee and employer, research institution and its contractors, and research institution and funding entity can be established by contractual provision. However, it must be specifically established and cannot be presumed. The inventor (or employer of the inventor), whether a subcontractor, consultant, or prime awardee or contractor, is granted the right to patent the invention. The contract clauses implementing the Act specifically direct the IP owner to file for the patent for the invention. The coverage for copyrights is less explicit, but the Act has been held to cover copyrights that are similar in purpose to patents (e.g., for software).

The federal government is provided a non-exclusive, irrevocable, paid-up license to practice the invention (or have it practiced on behalf of the United States) throughout the world. In some circumstances, the government can require the university to grant a license to a third party. This might occur if the invention was not brought to practical use within a reasonable time, if health or safety issues arose, if public use of the invention was in jeopardy, or if other legal requirements were not satisfied. The higher-tier contractor or grant awardee is given no rights in the invention. The inventor may not assign its rights to third parties, except to a patent management organization; so the higher-tier contractor or awardee is prohibited from obtaining the rights in that way.

The employer of the person who actually developed the invention must share with the inventor any income collected on the invention. Any remaining income, after expenses, must be used to support scientific research or education. The employer/IP owner must also produce a written IP policy that covers all developments subject to the act. Each prime contractor or grant awardee must include the clauses that implement the act in all subcontracts and subawards under which an invention might result.

License Agreement Issues

Current, Anticipated, and Background IP

In most cases the process of IP development is incremental. There may have been IP developed in the

past that must be the subject of licensing. Normally, the agreement will deal with IP developed under the current agreement. Sometimes (and often for copyright) the agreement will need to cover later (or derivative) work.

Level of Information Sharing

The patent laws require disclosure of inventions in order to obtain patent protection. However, the level of confidentiality for IP not yet covered by a filing and for IP that will not be dealt with under the patent or copyright laws (i.e., trade secret IP) should be addressed.

Cross-Licensing

It is common that each party will come to the table with IP. In such cases, and where additional development may be done by the licensee after the execution of the license, there should be an agreement on the use of licensing of such IP back to the original inventor.

Exclusivity, Royalties, and Geographic Scope of License

Licenses may be more or less exclusive, may require the payment of royalties for use, and may allow the practice of the IP in only one country, region, or worldwide. The amount of time and money required to bring most IP to market is most likely to be rewarded by exclusive marketing rights; non-exclusive rights often do not offer the proper incentives for development in this area.

Joint Ownership Issues

Purely joint owners probably do not require a license to commercialize and have no obligation to account to other owners for profits. However, more often each party has or will contribute IP to a common development effort. This may be dealt with by cross-licensing, allocation of fields of use, etc. However, this area is fraught with legal peril. Issues, such as antitrust law, far beyond the scope of this text, are raised.

Time Limits

IP licenses should contain reasonable time limits for disclosure, exercise of rights under the license, commercialization, payment, etc. Where the license is for patent rights or copyright, the failure to set limits on exclusivity may again bring in the specter of antitrust violations.

Administrative Costs and Procedures

The license should deal with which party will pay associated patent (or copyright, etc.) filing and maintenance costs. These can be very substantial, especially when worldwide rights are at issue. A related issue to be covered is who will file the patent applications, choose counsel, litigate infringements, and maintain records.

Sublicenses, etc.

The agreement should cover the right to grant sublicenses, the rights of the IP developer to step into the shoes of the sublicensor, sharing or other payment of royalties or other proceeds received under such sublicenses; commitments by sublicense, terms that do not exceed any limits imposed by the prime license or law; audit rights of the prime licensor; reservation of the rights of the US or other government, if applicable; and any indemnification from liability arising from development, marketing, and use of the IP.

Common Issues in Research Agreements between Industry and Academia

Who Controls the Research?

For many years, the primary issue in industry-university relations has been the control of the research activity. In his 1984 study, Donald Fowler identified one of the significant issues in industry-university agreements as industry attempts to "control what research the university does in the field of the proposed university-industry relationship."^{8,9} This issue has not, and will not, abate, since it is the defining core of the relationship. There are several ways to "control" the research, beginning with the statement of work (SOW) itself. Dr. Alfonza Atkinson, D.V.M., M.P.H., Ph.D., and Dean, College of Veterinary Medicine, Nursing and Allied Health, was both an accomplished research administrator and a much published principal investigator who wrote specifically on this issue.

As Dr. Atkinson points out, both parties may have reason to want a broad SOW and also to want a narrow one. The narrow SOW holds the university scientist "in check" but also limits the scope of any company rights to discoveries. A broad SOW gives the university leeway but also gives the company great rights to any discoveries made.

Going beyond the statement of work, there are several "standard" contract clauses that may be used to:

1. Limit industrial control;
2. Assure the right to industry technical direction;
3. Define the extent of financial control given to industry.

The research institution is almost always given "independent contractor" status. Under almost all circumstances, both parties will not want to establish an agency relationship where one party can act in the other's name. Therefore, except in partnership/joint venture arrangements, a clause such as the following should be used:

Independent Parties

The parties agree that each is independent, and not a partner, joint venturer, or agent of the other. The employees of each party shall not be deemed the employees of the other party for any reason whatsoever. Neither party shall have any right or authority to commit the other, incur any obligation on behalf of the other, or represent to any person or entity that any such authority exists.

This clause, or one of the many similar clauses, should cause no controversy in any grant or contract, or even in consulting agreements. In cooperative agreements that resemble partnerships, the parties should specifically set out any exceptions under which one party might commit the other. More of a problem is the acceptable extent of "technical direction." Normally, when technical direction by the company is provided for in the contract, the course of the work is made subject to the guidance of a technical representative of the company. "Technical direction" usually is defined to mean directives that approve approaches, solutions, designs, or refinements; fill in details or otherwise complete the SOW; or allow the company to shift emphasis among work areas.

Usually the technical representative does not have the authority to issue any instruction that:

1. Constitutes an assignment of additional work outside the statement of work;
2. Constitutes a material change;
3. Constitutes a basis for any increase or decrease in the total estimated contract cost, the fixed fee (if any), or the time required for contract performance;
4. Changes any of the expressed terms, conditions, or specifications of the contract;
5. Interferes with the contractor's rights to perform the terms and conditions of the contract.

The university is normally required to proceed with technical direction, even if it disagrees with the

directive. If the university disagrees with the direction, it is required to notify the company. If the parties do not agree, the issue is usually made subject to a formal mediation or dispute resolution clause in the contract. Even where a company may provide technical direction, the parties remain independent. Other clauses often seen in contracts with substantial company control include anti-assignment clauses (that prohibit the university from turning the work over to others) and key personnel clauses (that limit the personnel to those initially assigned or otherwise approved by the company).

The primary driver in selecting the extent of technical direction should be the same as in selecting the basic form of agreement. That is, in grants there should be little, if any, right of direction; in contracts for basic research only, only minimal direction; and in contracts for applied research and development of actual products, more comprehensive company rights. In cooperative agreements, the best method of assuring satisfactory direction is joint selection of a project manager or management team to provide ongoing coordination/supervision.

Who Obtains Patent and Other Intellectual Property Rights

Commentators have routinely identified patent issues as one of the most problematic in industry-university relationships. Robert Killoren, Assistant Vice President for Research, Pennsylvania State University, and Susan B. Butts, Director, External Technology, The Dow Chemical Company, summarize these issues well in a white paper, "Industry-University Research In Our Times."¹⁰ In their 2003 paper, the authors set out the history of industry and university intellectual property "discussions"; issues regarding the ultimate ownership of intellectual property; "background" rights; publication, copyright, and confidentiality concerns; worries about foreign access; and graduate student involvement.

Killoren and Butts note, however, that as the consequence of extensive federal funding of university research, the US government is a strong presence within the university-industry relationship and its presence influences related issues pertaining to intellectual property rights. The authors identify the early 1980s as the watershed period of industry-university research, during which time three major changes occurred that changed the nature of the industry-university relationship, particularly by two government-based events:

1. The 1984 passage of the Bay-Dole Act.
2. Many companies abandoned their stand-alone

basic research laboratories and "outsourced" research to universities, research institutes, and federal laboratories.

3. The federal government pushed industry to support more of the cost of the nation's fundamental research. IRS rules regarding tax-exempt bonds limited the universities' ability to negotiate with companies on intellectual property issues.

Publication Rights

Directly related to the patent issue is the question of publication of research results. The importance of this issue to universities is widely recognized, even in industry. Agreements must balance the university's right to publish with the need to delay publication when needed to obtain patent protection. The International Committee of Medical Journal editors have stated their position and enforce that balance by refusing to publish unless the balance, as they see it, is maintained. The editors strongly oppose contractual agreements that deny investigators the right to examine the data independently or to submit a manuscript for publication without first obtaining the consent of the sponsor. They take the position that such arrangements not only erode the fabric of intellectual inquiry that has fostered so much high-quality clinical research but also make medical journals party to potential misrepresentation, since the published manuscript may not reveal the extent to which the authors were powerless to control the conduct of a study that bears their names. The editors therefore require authors to disclose details of their own and the sponsor's role in the study. Many of the editors ask the responsible author to sign a statement indicating that he or she accepts full responsibility for the conduct of the trial, had access to the data, and controlled the decision to publish.

The editors' position is that a sponsor should have the right to review a manuscript for a defined period (for example, 30 to 60 days) before publication to allow for the filing of additional patent protection, if required. When the sponsor employs some of the authors, these authors' contributions and perspective should be reflected in the final paper, as are those of the other authors, but the sponsor must impose no impediment, direct or indirect, on the publication of the study's full results, including data perceived to be detrimental to the product. The editors require that a submitted manuscript be the intellectual property of its authors, not the study sponsor. They will not

review or publish articles based on studies that are conducted under conditions that allow the sponsor to have sole control of the data or to withhold publication.

Confidentiality Agreements

Almost every agreement between universities and government or industry discusses confidential information. Some agreements solely address confidential information—commonly called nondisclosure agreements, confidentiality agreements, or secrecy agreements. More comprehensive and complicated contracts between the parties, such as research agreements, almost always require at least some confidentiality. The common elements in these agreements include a definition of just what is covered, the terms by which confidential information may be transferred, and exceptions to the requirements for confidentiality.

Nondisclosure agreements, confidentiality agreements, or secrecy agreements are often presented to individual researchers for their signature. These persons should always ask their employer to review such agreements. In many cases the individual researchers should not be parties to these agreements, although they may sign the document to acknowledge the terms of the arrangement. Even when researchers are acting as independent consultants, they should make sure that they have counsel review any agreements. For confidentiality agreements between institutions, such as between a university and a funding party, the persons who normally sign contracts should be the authorized signing authorities. As with preresearch confidentiality agreements, university researchers are not parties to these agreements, although they may be required to consent to the terms before the document is accepted by the university.

What Is Confidential Information?

Confidential or proprietary information can exist in many different forms. It may consist of notes, testing procedures, trade secrets, formulae, test data, specifications, "know-how," software, etc. An important attribute of such information is its unavailability and inaccessibility to the public. It is this shroud of restricted use that imputes the confidential nature to the information in the eyes of the law. The agreement on confidential information should clearly define the confidential information, or, in the alternative, contain terms that allow for both parties to subsequently agree in writing as to what constitutes confidential information. It is

important to remember that in some cases, a signatory can agree not to disclose information that has otherwise been disclosed. All agreements should make information that is otherwise available to the public available for disclosure by the parties.

In determining what information is to be kept confidential, it is important to distinguish between information provided by the parties and that which arises from the research. Most universities require that results of research undertaken at the university be fully publishable at the discretion of the researcher, subject to limited and mutually agreed upon publications delays. This rule does not apply in some cases when clinical research is at issue. Agreements on the transfer of confidential information should almost always exclude information that is:

- Already known by the recipient;
- Independently developed by the recipient;
- Disclosed to the recipient by a third party without an obligation of confidentiality;
- In the public domain (at the time of disclosure or during term of agreement); or
- Disclosed pursuant to judicial or administrative order.

For clinical research, it is also important to except information necessary to treat the patients. Some negotiate to except information needed by a party for its own legal defense, since one cannot subpoena oneself to obtain the information for use in litigation.

The language or clauses covering confidential information should specify how the information may be used. The clause(s) might restrict the use of the information to a specific research purpose, and require that it only be disclosed to those employees of the parties or those researchers who agree to acknowledge the confidential nature of the information and be bound by terms similar to those in the parties' agreement.

The research agreement normally binds only the university and the company or companies that are signatories. However, the group of persons who may have access to company confidential information includes faculty members, university administrative staff, technicians, and graduate (and perhaps even undergraduate) students. These persons may not have any legal (as opposed to moral) obligation to preserve confidentiality unless they sign specific agreements. While asking the principal investigator to enter into a nondisclosure agreement does not present major problems, similar requirements for support staff and graduate students may be the cause of vociferous protests and, as a practical mat-

ter, unenforceable. Instead of trying to require such arrangements, universities should consider instituting a university-wide policy requiring nondisclosure of confidential information generally. The violation of university policy and the resulting academic- or employment-related sanctions that may be imposed are often of greater concern to those staff members and students than a contractual agreement with a "faceless corporation." Also, the parties can use the policy to support civil or criminal enforcement of the confidentiality requirements. (See, for example, Carmen McCutcheon's *Fairplay or Greed: Mandating University Responsibility Toward Student Inventors*, Duke Law & Technology Review 0026, 2003.)

Financial Arrangements

Because the federal government dictates detailed payment and financial administration terms and procedures for universities, there is a tendency to mimic these procedures in industry-university agreements, even though industrial sponsors are not used to them and may not even care about the minutiae of the university's finances. On the other hand, many industry sponsors apparently balk at payment of the entire university overhead burden. Federal policy on the appropriate type of contract is logical and provides a good guide for private agreements. The Federal Acquisition Regulations note that the absence of precise specifications and difficulties in estimating costs with accuracy normally precludes using fixed-price contracting for R&D. Therefore, it is common to use cost-reimbursement contracts in both basic research and development work. When levels of effort can be specified in advance, a short-duration fixed-price contract may be useful for developing system design concepts, providing ongoing consulting, and well-defined testing activities.

Projects having engineering requirements as a follow-on to R&D efforts normally should progress from cost-reimbursement contracts to fixed-price contracts as designs become more firmly established, risks are reduced, and processes move into prototyping and production consulting. Similar considerations suggest that cost-reimbursement procedures are normally appropriate for grants, although a pure best-effort type statement of work will be customary. The federal government also prescribes detailed accounting procedures and cost principles (see OMB Circular A-21) and payment provisions for its research grants and contracts. For

many universities, the payments are made by letter of credit drawdowns since most universities cannot borrow working capital or charge loan interest as an expense. A similar procedure may be advantageous for private agreements, providing quick payment to the university without tying up corporate funds in advance payments.

Audit Rights

Related to many of the financially oriented clauses is the question of audit. Under government agreements the sponsoring agency, specialized audit agencies such as the General Accounting Office, the Defense Contract Audit Agency, and even congressional investigators have substantial rights to audit not only for expenditures, but also internal management systems, patent administration, personnel actions, and property management. For the most part, both parties in private agreements will balk at such broad powers being granted to anyone, including private accounting firms. Further, few companies want to become involved in the internal details of a university's accounting system.

In many cases the pervasive nature of the federal grant and contract process provides a simple solution to any question of cost accounting or allocations. Since most universities do undergo federal audit, the results of the federal auditor's work can be used for private agreement purposes. For example, in payment related clauses, the allowable overhead may be set at the same level allowed by the federal government, which is determined by audit. For most purposes, this kind of reference to a federal standard removes any need for private audit rights. Occasionally, where the parties are dealing with sensitive information, such as patient data or proprietary software, there will be a need to provide for audit of the records.

Disputes Resolution

Fortunately, disputes, which rise to the level of legal action, are very rare in research agreements. However, one of the functions of any agreement is to cover the "what ifs" of the relationship. Unlike the federal system, there are many dispute resolution schemes available to private parties. Of course, the particular dispute resolution procedures available are bounded by the circumstances of the parties. For instance, many state institutions are required by law to use state dispute procedures or forums. In the absence of state or federal mandates, the choice of procedures is essentially between arbitration, either binding or nonbinding, and litigation in a

court. (As noted by William W. Park in "Arbitration of International Contract Disputes" [The Business Lawyer, Vol. 39, p. 1783, August, 1984], arbitration may be the only mutually acceptable procedure in international contracts.)

Many non-lawyers are enamored of arbitration because it is allegedly quicker and less expensive than litigation. However, arbitration's speed and money-saving features may be gained at the expense of completeness of the decision. In addition, there are indications that arbitration has evolved into a more complicated process that parallels litigation in cost and time.

Whether or not arbitration is chosen, certain choices must still be made. The first of these is the "choice of law." The governing law for a contract or grant can vary tremendously. For example, where a contract was made between a Texas company and a Mississippi company for performance in Louisiana, the governing law could be that of any of the three states. In addition, the parties can agree to have the law of another state or country applied if there is a rational basis for the selection. For instance, the companies might agree to use New York law if both companies were subsidiaries of New York companies. As a practical matter, the choice of law is often intentionally not made explicit. Each party wants their own jurisdiction and neither will accept the other's choice. Therefore, the choice is left to the arguments of litigators.

The forum is also often specified in agreements. If arbitration is used, the rules of an arbitral institution (e.g., the American Arbitration Association or the International Chamber of Commerce) should be specified, or a detailed discussion of procedural ground rules should be included for ad hoc arbitration. If the courts will be used, the parties should specify the court(s) that will be available. The parties may have to consider waiver of sovereign immunity (not an easy decision for a state institution) or a "direct action" clause under which insurers may be sued instead of the sovereign (and therefore immune) organization. Where any part of an arbitration award may be payable by the federal government, the parties should agree to require detailed findings of fact and conclusions of law to support the decision when arbitration is used. Otherwise, government officials may require that the case be relitigated under federal disputes procedures. Where the parties are in the position of prime and subcontractor under a federal contract, generally arbitration should not be used for claims related to the federal contract. Instead, disputes can "flow through" the prime to the contracting officer and the board of contract appeals. If this procedure

is not used, the prime faces the possibility of owing the subcontractor but not being able to collect from the government.

Insurance, Liability, and Indemnification

Part of any agreement today, and as a practical matter, part of almost any activity is the risk of a lawsuit. A consumer may allege that a product has injured person or property. A competitor may allege patent infringement. A patient may allege negligent medical treatment. The list can virtually go on forever. The immediate result of such allegations is usually legal fees and court costs. Ultimately, if accepted by a jury or court, the cost of such an allegation may be a multi-million dollar judgment that can bankrupt a company or strain the resources of a university. The standard response to such risk is to obtain insurance against liability. However, as the costs of liability insurance skyrocket, a second response is usually to try to shift liability to other parties. The allocation of risks can be one of the most difficult areas of negotiation in any agreement. When the agreement is with a public institution or even a private not-for-profit university, the issues become even more complex. Clauses in this area cover several topics. Many clauses require that the parties follow particular safety, health, manufacturing, or other risk prevention procedures. These clauses may aid an "innocent" party in shifting blame.

Clauses requiring specific insurance coverage are commonly used to assure that everyday risks are covered. In the industry-university setting, the costs of such coverage for the university should be specifically dealt with since many institutions are "self-insurers" and insurance costs may not be fully recoverable as indirect costs under federal contracts. (The federal government limits insurance costs since it indemnifies cost-reimbursement contractors for some losses.) Many agreements will need to cover procedures for obtaining liability waivers from third parties (e.g., patients in drug testing and experimental subjects). In other cases, it will be important to make sure that all parties agree that no waivers are allowed (e.g., in clinical trials, patients generally cannot be made to waive their legal rights).

Each of the parties will usually want indemnification against certain risks. Indemnification clauses allow a party to shift some or its entire share of the damages to another party. Indemnification is normally quite contentious and negotiation can be complex. Clauses may provide individual and company indemnity arising from any, or only certain, claims. Rights and obligations may be triggered if

the claim is made regardless of when or if the occurrence, accident, or event took place. In some cases, not only does the claim have to be made, but it must be reported by the indemnified party to the indemnitor within a certain period. The more friendly form does not require that the claim be reported during the specified period. Instead, it simply requires that the reporting take place "as soon as practicable" or similar language. Many clauses fail to define the term "claim." This may lead to confusion and litigation battles between the parties. A clause might define the term "claim" to include a "written demand for money" and a "civil proceeding." It goes without saying that the broader the definition of the term "claim," the broader the coverage that is afforded by the clause. Some of the "claims" that may need to be specified include:

- Written demands for monetary, nonmonetary, and injunctive relief;
- Civil proceedings for monetary, nonmonetary, and injunctive relief;
- Criminal proceedings;
- Administrative/regulatory proceedings;
- Arbitration proceedings;
- Civil, criminal, administrative, or regulatory investigations;
- Securities investigations;
- Administrative and regulatory proceedings against the entity on a codefendant basis.

The indemnity clause usually covers not only the parties, but also directors and officers, employees, agents, and representatives. In appropriate circumstances, the following might also be specified:

- Trustees and governors of the corporate entity
- Management of joint ventures
- Members of limited liability companies affiliated with the corporate entities
- Executives of the company serving as executives on specifically covered "outside entity" companies
- Counsel, accountants, etc.
- Students
- Consultants

Corporate entities might include the following:

- Subsidiaries of the corporate entity
- Subcontractors, vendors, and suppliers

Under most indemnity clauses the indemnitor promises to pay some or all of the "loss" arising from a claim. Usually the definition of "loss" will include the following:

- Damages
- Judgments

- Settlements
- Defense costs

It often explicitly excludes the following:

- Civil or criminal fines or penalties
- Punitive or exemplary damages
- The multiplied portion of multiplied damages
- Taxes

Loss might also include the following:

- Punitive, exemplary, and multiple damages
- Civil fines.

However, in many states these types of losses may not be subject to indemnification if there is any "moral turpitude" or other "bad act" involved on the part of the indemnified party. Usually indemnity clauses obligate the indemnitor to defend the other party in connection with potentially covered litigation. Sometimes, the clause allows or requires the indemnified party to defend the litigation and only provides for reimbursement of defense costs. Usually, the indemnitor does have at least the "right" to associate in the defense. Under some state laws it may be necessary to specifically provide for "advancement" of defense costs. This means that the indemnitor will pay defense costs before the end of the litigation.

Under most indemnity clauses the indemnitor cannot settle a claim without first obtaining the written consent of the indemnified party. Some clauses include an additional provision that provides that if the indemnified party withholds consent to such a settlement, the indemnitor's liability will not exceed the amount for which the indemnitor could have settled. Alternatively, the indemnified party should seek to modify the language so that it applies only when that party "unreasonably" withholds consent to such a settlement. The exclusions in indemnity clauses vary tremendously. Some of the typical exclusions include the following:

1. The "Bad Conduct" Type Exclusions

- Intentionally dishonest acts or omissions
- Fraudulent acts or omissions
- Criminal acts or omissions
- Willful violations of any statute rule or law
- Illegal profit
- Illegal remuneration

2. The Internal Claims Exclusion

Clauses may contain an exclusion for a claim brought either by an employee, officer or director, etc. of the indemnified corporation against the corporation. Thus, a nurse who brings a

claim for an adverse reaction to a drug to which he or she was exposed as a part of the clinical trial could not be subject to indemnification. The research institution would have to deal with the claim under worker's compensation or similar procedures.

Some indemnity clauses contain a requirement for "alternative dispute resolution." It provides the mechanism by which disputes or differences under the policy must be resolved. The various ADR clauses include the following:

- Binding arbitration only
- Mediation and, if mediation is unsuccessful, then binding arbitration
- Election between mediation and arbitration, with one party or the other having veto power over the selection
- Mediation or binding arbitration with a waiting period before suit is filed (typically 120 days) if mediation is selected

All indemnification contains a "cooperation" obligation. While most clauses do not elaborate on the scope of cooperation, it is generally understood to require the indemnified party to cooperate in the handling and defense of the litigation. It may be necessary to modify this provision to deal with cases where the indemnified party may not have control over some of the players, such as students.

Competition and Conflicts

As awareness of the potential for profitable arrangements with universities has grown in the commercial world, so too have academics been drawn to the "filthy lucre" of Wall Street. Professors and even graduate students have taken equity positions in commercial organizations, often without considering all the issues that arise. However, as Laurie Garrett has said, "There are problems." (*SRA Journal*, Fall 1985). The problems are straightforward. First, to what extent should universities and faculty members compete with (1) their sponsors, and (2) private business generally? Second, how can the university avoid the loss of open debate and a free exchange of ideas while cooperating with sponsors to whom privacy is money?

Many times, the issue of competition has not been addressed squarely, even in very large research institutions. While the federal tax code and various state laws generally militate against competition by universities with for-profit organizations, there is

no federal law prohibiting such activities. Intra-university conflicts, while related to the issue of competition, have been a subject of much debate. Unfortunately, there has not emerged any real consensus as to a solution. One response has been to restrict faculty consulting—with the result that some of the most creative faculty members have simply left the university. Other universities and several states have required disclosure statements—a step in the right direction, but not the answer for individual agreements.

While covenants not to compete and warranties against organizational conflicts of interest are common in industry-to-industry agreements, it may be so difficult to reach agreement upon equivalent clauses that no language will be included in many industry-university agreements. Instead, industry will have to simply accept the bad with the good. The clauses below are crafted as compromises, but the authors expect less than a friendly response to even such diluted clauses. In fact, the more popular clause may be a disclaimer of any responsibility such as the last clause sets out below.

Disclosure of Conflicts

University shall use its best efforts to disclose activities by the university to sponsor which are determined to be detrimental to sponsor's present commercial interests in the following areas. The university shall not be liable for failure to disclose any detrimental activity, nor shall the disclosure (by the university or others) of such activity provide any basis for actions for breach of contract or for return of any funds paid under this agreement. However, sponsor shall have the right to discontinue its support upon receipt of such a disclosure by the university if the sponsor gives thirty (30) days' notice of discontinuance and pays for all work completed through the date of discontinuance of support. This clause does not apply and university makes no representation or warranty related to the independent consulting activities of faculty, staff, or students.

Competition

University as a public institution is not in competition with sponsor. However, the university reserves the right to engage in research, undertake sponsored research, and enter into agreements of any kind allowed under state law [and which do not generate unrelated business income as defined in the Internal Revenue Code] with

any other organization whether or not said organization is in competition with sponsor. Sponsor acknowledges that it has reviewed the lists of university agreements and sponsors provided to it.

Organizational Conflicts of Interest (General)

The university warrants that, to the best of its knowledge and belief, and except as otherwise disclosed, there are no relevant facts that could give rise to organizational conflicts of interest. The university agrees that, if after award, an organizational conflict of interest with respect to this contract is discovered, an immediate and full disclosure in writing shall be made to sponsor that shall include a description of the action that the university has taken or proposes to take to avoid or mitigate such conflicts.

Disclaimer of Any Warranty Related to Conflicts of Interest

University specifically disclaims that it has made or is making any warranty that its activities are not in conflict with the interests or business of sponsor. Sponsor understands and agrees that the activities of the faculty, staff, and students of the university are not such that the university can represent that it, its faculty, staff, or student body is not in conflict. Accordingly, the university is not liable for any damage, loss, or competitive harm that may come to sponsor because of any activity by the university, its faculty, staff, or any student.

Changes in the Agreement

When a contract is formed, certain rights and responsibilities become legally binding between the parties. Normally, neither party has an inherent right to change a contract in any way that affects the other party's rights and obligations. However, because there is no inherent right to make changes, one (or both parties) almost always wants to incorporate a changes clause in all but the simplest agreements. The "buyer" (i.e., the sponsor) usually wants a clause that allows it to unilaterally alter a contractor's work so long as the change is within the general scope of the contract. In this way, a sponsor may rapidly react to unanticipated changes or conditions that alter the original plan for the research.

Most changes clauses require that changes be reduced to writing. A written change order protects both parties—the sponsor from having to pay for unwanted work, and it also protects a research institution by evidencing changes that require an adjustment of contract price and or completion time.

Sometimes a research institution, as opposed to a sponsor, will request a change order. Under most clauses the research institution is required to provide formal, written notice of the anticipated changed work. This written notification, which is separate from the actual change order, allows the other party to investigate, correct, and accommodate a change in an effective manner, minimizing its impact upon project costs and schedule. The party affected should always provide formal notice when events have occurred that may constitute a change to the contract, irrespective of whether there has been a formal change. Such events are called "constructive changes" and are usually treated as a change for compensation purposes, especially in connection with US federal government contracts and subcontracts. When notice of such "constructive changes" is followed by written confirmation, such as a letter or meeting minutes, the courts may avoid forfeiture of compensation claims and consider them on their merits. Absent a written memorial, though, the likelihood of prevailing in a subsequent lawsuit is drastically reduced.

Of course, the parties to a contract may always agree to have additional or different work to be done outside their contract or alter the provisions of the written agreement. The course of conduct between the parties may evidence a modification of the contract terms where formal written notice is no longer required. If a party has actual notice of the events giving rise to a claim, and there was no prejudice by the absence of written formal notice, then a court may consider the merits of the claim for changed work. Nevertheless, absent proof of waiver, notice provisions will normally be enforced.

Disputes regarding scope of work are often the reason for claims. Scope of work is defined as the extent of the responsibility to perform certain contract work. To determine the scope of work, the parties may have to look to other contract documents—specifications, contracts with others—and to "industry" standards (good clinical practices, etc.). Questions regarding scope of work should be resolved in the written contract. Scope of work references should be detailed in contract.

Changes clauses should always address the scope of the changed work, the measure of the

adjustment in price, and the procedure to be followed to perform the work and price the adjustment. Under the typical changed work provision, the owner may direct changes and the contractor must perform changes even if there is no agreement as to price. Extra work is work not usually contemplated by contract. Changed work is work contemplated by contract but where the scope of the work has changed.

Termination of Contracts

Normally contracts are concluded by full performance by all parties. However, sometimes parties cannot or will not complete their obligations under the contract. Therefore, contracts may be terminated by reasons of rescission, breach, or impossibility of performance. In research contracts, it is also common for one or both parties to have the right to simply terminate upon notice to the other party.

Impossibility of Performance

Normally, each party to the contract must perform its obligations, completing the exchange of promises and receiving what has been bargained for. Impossibility of performance can terminate a contract if an unforeseen contingency prevents the performance of the contract. While in most cases, the law allows either party to avoid its obligations if those obligations are actually rendered impossible to perform, that rule is not universal. Therefore, most contracts contain what is called a "*force majeure*" clause. *Force majeure* literally means "greater force." These clauses excuse a party from liability if some unforeseen event beyond the control of that party prevents it from performing its obligations under the contract. Typically, *force majeure* clauses cover natural disasters or other "Acts of God," war, or the failure of third parties—such as suppliers and subcontractors—to perform their obligations to the contracting party. It is important to remember that *force majeure* clauses are intended to excuse a party only if the failure to perform could not be avoided by the exercise of due care by that party. *Force majeure* clauses normally apply equally to all parties to the agreement. Usually, the clause sets forth some specific examples of acts that will excuse performance under the clause, such as wars, natural disasters, and other major events that are clearly outside a party's control. Inclusion of examples will help to make clear the parties' intent that such clauses are not intended to apply to excuse failures to perform for reasons within the control of the parties.

A *force majeure* clause might read as follows:

Neither party shall be liable in damages or have the right to terminate this Agreement for any delay or default in performing hereunder if such delay or default is caused by conditions beyond its control including, but not limited to Acts of God, Government restrictions (including the denial or cancellation of any export or other necessary license), wars, insurrections and/or any other cause beyond the reasonable control of the party whose performance is affected.

Rescission

Rescission may terminate the obligations of a contract in a variety of circumstances. One party may have the legal right to rescind the contract, or the parties together agree to terminate the contract. Normally, rescission is not considered termination, but a "rolling back" of the contract to the situation existing before it ever began. For instance, a minor may be able to rescind a contract to buy a car and get all of his or her money back, even if he or she has wrecked the car. Normally rescission is a legal right and not covered by contract clauses.

Breach of Contract

Breach of a contract may terminate the obligations of the contract. Either one party or both parties have failed to perform an obligation as expected under the contract. A breach may occur when a party refuses to perform the contract, does something that the contract prohibits, or prevents the other party from performing its obligations. It is important to note that there is a distinction between material and immaterial breaches of contract. A material breach is a serious one; it is a breach that goes to the heart of the contract. The injured party can seek "damages," that is, a money payment to cover losses resulting from the breach. An immaterial breach of contract is a trivial breach of contract and does not give rise to any rights under the contract. Many actions or inactions might be technical breaches but will not be recognized as cause for litigation. Terminations for breach need not be pursuant to a contract clause, but there usually will be such clauses in almost any contract.

Termination Clauses

Termination clauses describe when the parties may stop performing their obligations prior to the end of the contract. Most provisions permit termination only for serious breaches of the agreement such as

failure to actually do the work, failure to pay money owed, breaches of warranty such as the warranty that a product will not infringe another's IP, or failure to limit access to confidential materials. Additionally, the parties may specify the breaches they consider material. That way, the agreement cannot be terminated for a breach that only one party thought was serious.

Termination on Notice and Termination for Convenience

Some agreements permit either party to terminate the agreement for any reason, or no reason at all, provided adequate notice is given to the other party. Usually either party may terminate by giving timely notice to the other. Although this sounds equitable and convenient, it can lead to inequitable results. Therefore, most termination clauses provide for payment by the terminating party of the costs of performance and the costs that cannot be avoided after termination. This type of clause is mandatory in all US federal government contracts. However, only the government is given the right to "terminate for convenience." The university or other contractor must perform its obligations or be subject to "termination for default" (i.e., for breach of its duty to perform).

Notice of Termination and Termination Procedures

Notice of the termination of a contract may be given according to the terms of the contract. For example, the parties may agree in a contract that it can be terminated in a particular way. In such cases it is important to follow the required procedures to the letter. After receipt of a notice of termination the parties should normally stop work as specified in the notice, and stop any subcontracts except as necessary to complete the continued portion of the contract. They will need to determine the need to terminate subcontracts and cancel or divert applicable personnel, including student assignments that extend beyond the effective date of termination. The parties will need to determine who has what rights and interest in the "work in progress" and any tangible and intangible (e.g., IP) property acquired or developed under the terminated contract. One or both parties will need to settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts. The parties

will have to deliver any confidential information and items that, if the contract had been completed, would have been required to be returned. Normally, the contractor will need to submit a termination settlement proposal. In most cases, the university and the sponsor will negotiate and agree on the amount to be paid because of the termination. The parties may want to use the cost principles and procedures in Part 31 of the Federal Acquisition Regulation (FAR) to govern which costs can be claimed and how such costs are measured.

Contract and Grant Administration: Responsibilities and Duties

The contract and grant administration function is broad and complex, often involving many persons with expertise in varied subject areas. Many of the responsibilities and duties in contract and grant administration flow from the specific terms and conditions of the particular agreements, but others are a matter of internal organization and the delegations of authority within the organizations of the parties. Senior management, principal investigators, other officials, project administrators, and appropriate or participating administrative offices should be advised of and understand the commitments they are undertaking under accepted or executed agreements. The contract administration functions are many. The persons who negotiated and executed the contract or grants often delegate many of these functions. Some of the primary activities that may need to be done include:

1. Conducting post-award orientation conferences internally and coordinating activities between the parties.
2. Resolving issues in controversy.
3. Determining the adequacy of performance as it occurs and when delivery of the "end product" is made.
4. Preparing, reviewing, and approving or disapproving the requests for payments under the progress payments or other payments clauses.
5. Making payments and allocating the payments in financial records of the parties.
6. Ensuring timely notifications under the contractor.
7. Monitoring the financial activities under the contract.
8. Dealing with tax and tax exemption issues.
9. Processing import and export documents such as duty-free entry certificates.

10. For classified contracts, administering those portions of the applicable industrial security program.
11. Negotiating and administering individual task requests under master contracts.
12. Negotiating prices and executing supplemental agreements.
13. Negotiating and executing contractual documents for settlement of partial and complete contract terminations.
14. Negotiating and executing contractual documents related to multiyear contracts (e.g., options, cancellations, renewals, etc.).
15. Processing and executing novation, assignments, and change-of-name agreements.
16. Handling administration of property purchased under the agreements or used in connection with performance.
17. Administering acquisition or fabrication of special test equipment, laboratory animals, biological materials, radioactive or hazardous substances, etc.
18. Performing necessary screening, redistribution, and disposal of equipment, inventory, supplies, etc.
19. Ensuring compliance with socioeconomic requirements imposed by government programs or contractual commitments.
20. Administering subcontracts.
21. Accomplishing administrative closeout procedures.
22. Administering continuing obligations concerning IP, records management, and audit.

It is important to reiterate that the mutual obligations of the parties are established by, and limited to, the written stipulations in the contract. The parties should assure that both know just which persons are responsible for assuring compliance with the different aspects of the contract, especially any statutory, legal, business, and regulatory provisions. This should be established in either a post-award conference or a letter (if not already stipulated by contract provisions).

••• Endnotes

1. *National Conference on Commissioners on Uniform State Laws*, "Uniform Partnership Act," 1997, http://www.law.upenn.edu/bll/ulc/ulc_frame.htm (accessed September 27, 2005).

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4. O. E. Williamson, *The Economic Institutions of Capitalism*, New York: Free Press, 1985.
5. *Ibid.*
6. Refer to Thomas G. Field Jr.'s "Intellectual Property: The Practical and Legal Fundamentals" at <http://www.piercelaw.edu/tfield/pL.fip.htm> (accessed August 8, 2005) for more information. Article adapted from Field Jr., "Intellectual Property: Some Practical and Legal Fundamentals," originally published in *IDEA*, 34 (1994): 79–128.
7. Technically, the act is entitled "The Patent and Trademark Laws Amendments of 1980, as Amended" (in Chapter 18 of title 35 of the U.S. Code). Regulations implementing federal patent and licensing policy regarding "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms" are codified at 37 CFR Part 401.
8. Donald Fowler, "University-Industry Relationships," *Research Management* 27 (January-February 1984):35–41.
9. Also see S. Atkinson, "University Industry Research Agreements: Major Negotiation Issues," *SRA Journal* 17 (Fall 1985):67.
10. Robert Killoren and Susan Butts, "Industry-University Research in Our Times," white paper organized by the Government-University-Industry Research roundtable, the Industrial Research Institute, and the National Council of University Research Administrators, June 23, 2003.

Contracts: Form, Function, and Issue Spotting

Cindy Kiel, JD, CRA

Introduction

This chapter focuses on the formation of a contract, the different types of contracts one might come across in research administration, and specific contractual terms that a research administrator for a nonprofit entity should consider during negotiation. To start, the definition of a contract is an agreement between two or more persons that creates an obligation to perform. A contract is a promise, legally recognized, which, if the terms of it are breached, gives one party rights to seek legal remedy from the other for failure to comply with the duties of the contract. A contract is not a gift: there are terms attached. In a legal sense, all grants, cooperatives, and other agreements are contracts, though a true governmental contract is treated under different codes and guidelines than grants, cooperative agreements, and other agreements.

Contract Formation

Contract formation is nothing more than a simple equation. If you take the above definition and divide it up into key points, the equation looks like this:

$$\text{Offer} + \text{Acceptance} + \text{Consideration} = \text{CONTRACT}$$

This section addresses each element of a contract and breaks it down into comprehensible terms.

The Offer: An offer is a statement or communication about what someone will do if the offer is accepted by another party. The offer must be

communicated to the other party, contain definite terms, and show the intent to enter into a contract by the one offering. The definite terms and intent are the elements that distinguish offers from advertising. Requests for proposals, requests for applications, or requests for bids are not offers. Rather, they are invitations for entities to submit an offer to a sponsoring or contracting entity.

Acceptance: Acceptance must also be communicated to the one offering in the manner specified by the one offering, or by any reasonable means if the method was not specified and the acceptance must (as common law) mirror the terms of the offer in order for a contract to be formed. Under the Uniform Commercial Code, the acceptance does not have to perfectly mirror the offer, but the material or key elements of the offer must be accepted without modifications.

Consideration: In the world of legal contracts, consideration does not mean being kind or nice or considerate. Rather, consideration can be defined as "something bargained for and given in exchange for a promise." Other terms used for consideration can be *quid pro quo*, "give and take," or "you scratch my back and I'll scratch yours." This is the essence of the contractual relationship. In the world of research administration, you see consideration at work in a proposal and award. The proposal might say, "Institution promises to perform the following scope of work and provide Agency with annual reports if Agency promises to provide funding in the amount of 1 million dollars." The consideration from the institution is research work and reports and the consideration from the agency is money.