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Developing Harmonious University-Industry Partnerships

Cover Page Footnote

Special thanks are given to Drs. Merrilea Mayo and Steven A. Merrill at the National Academies for their counsel and advice, and to Dr. Mayo for reading an earlier version of this article.

DEVELOPING HARMONIOUS UNIVERSITY-INDUSTRY PARTNERSHIPS

*James J. Casey, Jr.**

I. ABSTRACT

University-industry partnerships are essential for universities, industry, and the United States. Universities benefit from their interactions with industry, particularly for faculty and students. Industry derives benefits in the form of project deliverables from their partnerships with universities. Local communities, regions, and the entire United States benefit from these partnerships through the next generation of a highly trained workforce and the resulting economic benefits of growth (job growth, business growth, and profitability). However, there are still problematic areas in this partnership, particularly in areas of intellectual property and technology transfer.

This successful relationship can be strengthened and developed further by addressing issues within the entire relationship, not just those related to intellectual property and technology transfer. These relationships can be made more harmonious by addressing all issues central to the partnership. This paper is largely reflective of the comments I made during my presentation at the Sixth Annual Licensing Intellectual Property Seminar at the University of Dayton School of Law on March 16, 2004.

II. INTRODUCTION

Since its emergence in the years after World War II, the field of research administration has been a profession in a state of constant

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development and reinvention. While change has always been constant in the field of managing grants and contracts at college and universities, the past ten years has seen an explosion of change in the profession. This dynamic change has forced colleges and universities to adapt quickly to the changing environment in research administration.

At the present time, the following issues are among the most pressing:

- A. Increasing competition for grant and contract dollars by colleges, universities, hospitals and medical centers, and other entities seeking extramural funding.
- B. Regulatory compliance by colleges, universities, and hospitals and medical centers in a variety of areas (human subjects research, animal research and care, biosafety, conflict of interest, conflict of commitment, and misconduct in research).
- C. Financial cost accounting, compliance, and auditing.
- D. The relative decline of federal research and development (“R&D”) support coupled with the rise of corporate funding of R&D.
- E. University-industry relationships, particularly with concern toward areas that are viewed as contentious (negotiation of research and intellectual property agreements). It is this aspect of research administration that this article addresses.

Research partnerships between universities and their industrial sponsors are an important and generally productive relationship for both parties. Universities receive financial and non-financial support from their corporate sponsors. Their graduate and undergraduate students receive an excellent educational experience by working in industry, which prepares them for their post-graduation careers. Universities develop greater linkages with alumni in industry who will perhaps donate back to their alma mater.

Industry also receives benefits from these partnerships. Their work is advanced through the employment of graduate and undergraduate

students, they have access to facilities they may not otherwise have, and their own corporate agenda is advanced by working with faculty and the

completion of project deliverables.¹

These partnerships also directly and/or indirectly benefit local, regional, and national economy. Economic growth in the United States is necessarily tied to the growth and effective use of science and technology in the national economy, and it is axiomatic to say that the long-term dynamic growth of the American economy, and its place in the international economy, is tied to further advancements in science and technology.²

This essay, based upon my presentation at the Sixth Annual University of Dayton School of Law Seminar on Licensing Intellectual Property on March 16, 2004, looks at the current state of university-industry partnerships, outlines a current attempt to improve these partnerships—The University/Industry Partnership—and draws some conclusions and provides commentary on how to develop and sustain harmonious university-industry partnerships.³

The University-Industry Partnership (“Partnership”)⁴ is a multiorganizational initiative between the National Council of University Research Administrators (NCURA), the Government-University-Industry Research Roundtable (GUIRR), and the Industrial Research Institute, Inc. (IRI). The objective is to “[s]treamline and strengthen contract-based relationships between industry and academia by developing a nationally accepted array of contractual solutions regarding intellectual property rights.”⁵ Delegates from each organization are part of the Partnership and

¹ For an excellent series of articles on the science and engineering workforce in the United States, particularly with reference to undergraduate and graduate students, see Marye Anne Fox & Govt.- U.-Indus.- Research Roundtable, *Pan-Organizational Summit on the U.S. Science and Engineering Workforce: Meeting Summary* (Natl. Acad. Press 2003).

² For an excellent discussion of how America’s economic future is tied to science and technology, see Natl. Research Council, *Harnessing Science and Technology for America’s Economic Future: National and Regional Priorities* (Natl. Acad. Press 1999).

³ For additional articles on the university-industry partnership, see Bus.-Higher Educ. Forum, *Working Together, Creating Knowledge: The University-Industry Research Collaboration Initiative* (Am. Council Educ. 2001); Louis Berneman, *University-Industry Collaborations: Partners in Research Promoting Productivity and Economic Growth*, 13 no. 2 *Research Mgt. Rev.* 28 (2003); Ben J. Dyer, *Can Universities Make Money on Start-Ups?*, 13 no. 2 *Research Mgt. Rev.* 23 (2003); Todd E. Garabedian, *Recent Developments in Intellectual Property Law: Avoiding Traps in the Pursuit of University Research*, 14 no. 1 *Research Mgt. Rev.* (2004); Todd E. Garabedian, *Nontraditional Publications and Their Effect on Patentable Inventions*, 20 *Nature Biotechnology* 401 (2002); GUIRR & IRI, *Simplified and Standardized Model Agreements for University-Industry Cooperative Research* (Natl. Acad. Press 1988); Jeffrey H. Matsuura, *An Overview of Intellectual Property and Intangible Asset Valuation Models*, 14 no. 1 *Research Mgt. Rev.* 33 (2004); James A. Severson, *Tectonics in the University-Industry Research Partnership*, 13 no. 2 *Research Mgt. Rev.* 12 (2003); Roger Tellefsen, *Strategic State Planning for Technological Innovation: The Pennsylvania Ben Franklin Partnership, Strategic Planning for University Research*, 413-19 (1992); Tyler B. Thompson, *An Industry Perspective on Intellectual Property from Sponsored Research*, 13 no. 2 *Research Mgt. Rev.* 3 (2003).

⁴ The original title of the partnership was “Industry/University Congress” and was changed to “The University-Industry Partnership” in June, 2004.

⁵ GUIRR, NCURA & IRI, *GUIRR Council Meeting Update* (June 2-3, 2004).

representatives from select federal agencies participate in an advisory role. The formal title of this project is “Re-Engineering Intellectual Property Rights Agreements in Industry-University Collaborations.”⁶

III. THE CURRENT STATE OF THE PARTNERSHIP

Partnerships between universities and industry have been by and large a successful venture for both parties. These relationships often stretch back to the early part of the 20th century. The minutes of The Pennsylvania State University’s University Research Council meeting of February 6, 1928, asked the following two quite familiar questions: “To what extent should the college enter into agreements with commercial concerns and under what conditions? What should be the institutional policy in reference to patents and patent rights?”⁷ The more things change, the more they stay the same.

The National Science Foundation has reported that prior to 1980 industry support of university research was rather constant. After 1980, growth became rather pronounced, rising from about \$1 billion in 1989 to approximately \$2.3 billion in 2000, and with an overall increase in science and engineering research of 150% between 1988 and 2000.⁸

There has been similar remarkable growth in total gross income for American university and research institute patents as reported by the Association of University Technology Managers, rising from slightly less than \$200 million in FY 1991 to \$1.25 billion in FY 2000.⁹

Despite this success, the university-industry partnership is in a state of constant change and stress. As the first Partnership meeting indicated, the following external forces are having a major impact on this relationship:

- A. The research environment is changing in the U.S. and abroad. Economic conditions and government funding are forcing universities to look harder for research funding. U.S. Government investment in science, technology, and engineering is thought to have been exceeded by worldwide investment.

⁶ *Id.*

⁷ Robert Killoren & Susan B. Butts, *Industry-University Research in Our Times*, 3 (2003).

⁸ Natl. Sci. Found. / Div. Sci. Resources Statistics, *Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 2000*, Table B-1 (Natl. Sci. Found. 2002).

⁹ *Association of University Technology Managers Licensing Survey Fiscal Year 2000: A Survey Summary of Technology Licensing (and Related) Performance for U.S. and Canadian Academic and Nonprofit Institutions, and Patent Management Firms* (Assn. of U. Tech. Managers 2001).

- B. Students and workforce supply and demand are central to the research enterprise. Changes in the pattern of this chain or pipeline are raising questions as to whether the American public understands the importance and its economic linkage. At the U.S. laboratories of Hewlett-Packard, twenty-four out of twenty-five new hires are foreign nationals. Are there enough Americans in science and engineering to “get the job done?”
- C. Globalization is both a barrier and an opportunity for universities and companies. Foreign universities are increasingly able to compete with American universities in the R&D arena, even to the point that U.S. companies are doing business with foreign universities because of more favorable intellectual property rights.¹⁰ They are also considered less expensive and their research leaders have been trained in the United States.
- D. Local economic development pressures in states are forcing universities to become drivers of economic development and provide a return on the state’s investment. Universities are feeling pressures to link research to shorter-term immediate economic welfare and to foster “entrepreneurial spirit” within the university and in the community.¹¹

¹⁰ Sen. Subcom. on Sci. Tech. and Space of Comm. on Com. Sci. and Transp., *Testimony of R. Stanley Williams, Hewlett-Packard Laboratories Fellow* (Sept. 17, 2002). A representative of Hewlett-Packard testified before Congress that U.S. companies are increasingly turning to foreign research universities offering more favorable intellectual property rights rather than work with U.S. universities. This is another form of labor outsourcing that has not received the media coverage that direct job exportation has, but nonetheless is just as important. And since the use of undergraduate and graduate students is generally integral to most university-industry collaborations, this has startling implications for education in the United States. Not only do the differences of intellectual property ownership stress university-industry collaborations in the U.S., but litigation between U.S. companies and universities over intellectual property ownership erodes this partnership.

¹¹ The federal government, through grant programs, encourages local and regional partnerships between universities, industry, and other local profit and nonprofit organizations. An excellent example of this is the Partnerships for Innovation Program (PFI) sponsored by the National Science Foundation (NSF). Bradley University received a three-year, \$600,000 PFI grant to do the following: 1) leverage the region’s substantial intellectual capital assets to create and nurture interdisciplinary, interinstitutional R&D partnerships leading to innovation and commercialization; 2) develop the region’s substantial and underemployed human capital assets through innovative and aggressive educational and workforce development programs; and 3) develop a model for the management of intellectual property (IP) collaboratively developed within a partnership of diverse entities, and to link a portion of the IP-based revenue stream to Peoria NEXT programmatic initiatives. *Peoria NEXT: Creating and Sustaining Research, Innovation, and Commercialization in Central Illinois: Proposal Summary*. Partners with Bradley University on this grant are Caterpillar, Inc., University of Illinois College of Medicine at Peoria (UICOM-P), U.S. Department of Agriculture National Center for Agricultural Utilization Research (NCAUR), Peoria Public School District 150, Illinois Central College, and OSF Saint Francis Hospital. Peoria NEXT is a non-for-profit corporation chartered under the laws of the State of Illinois and is comprised of the major institutional players in the Peoria area, including those mentioned as partners in the NSF-PFI grant. The mission of Peoria NEXT is to “create a healthier future for our

- E. Stress continues to build in university-industry relationships, particularly due to the negotiation of research agreement and intellectual property agreements. Contentious and draining negotiations have been referred to as the “hassle factor.” When the hassle factor becomes too great, the level of trust diminishes, less industrial funding is invested in universities, and there is a “silent dissolution of the relationship.” Unrealistic expectations on the part of universities and industry often are at the root of this problem (financial gain for universities, work product for industry). Legal issues concerning intellectual property, licensing, publication, and liability/indemnification remain the most significant issues in the university-industry partnership. Negotiating these clauses in research and IP agreements remain the most significant bottlenecks in creating and maintaining harmonious university-industry partnerships.¹²
- F. University missions are in flux and industry missions differ by industry. This divergence leads to natural stress between universities and industry. The information technology sector maintains that universities should put all their IP in the public domain, while the pharmaceutical industry takes an opposing view. Some universities say they might be comfortable putting their IP in the public domain in some instances, but they cannot give away all their intellectual property rights.¹³

regional community evidenced by increased economic growth and diversity, improved physical well-being, and the resultant social stability and opportunity.” Peoria NEXT, *Introduction*, <http://www.peorianext.org/about.php> (accessed Jan. 21, 2005). The vision of Peoria NEXT: “By 2015, we will be the preferred Midwestern region in support of the culture of discovery, the creation of innovation and the implementation of commercialization in the areas of life science, material science, and engineering science.” *Id.*

¹² In the realm of intellectual property, patents tend to be the most problematic and difficult form to reach agreement on in research and intellectual property agreements. In addition, it is fair to ask whether the patent system in the United States is still operating optimally for the needs of science, technology, and innovation in the 21st Century. To this end, The National Academies are in the process of publishing a report that looks at the current status of the patent system, its performance, and how it can continue to reinvent itself. Natl. Research Council Natl. Acads., *A Patent System for the 21st Century* (Stephen A. Merrill, Richard C. Levin & Mark B. Myers eds., Natl. Acads. Press 2004). The publication copy of this report indicates that the patent system is working well, but that there are stresses to the system that threaten its functionality. The report makes the following recommendations to improve the patent system: 1) preserve an open-ended, unitary, flexible patent system; 2) reinvigorate the non-obviousness standard; 3) institute an open review procedure; 4) strengthen USPTO capabilities; 5) shield some research uses of patented inventions from liability for infringement; 6) modify or remove the subjective elements of litigation; and 7) reduce redundancies and inconsistencies among national patent systems. *Id.* at 4-6. For an excellent series of articles on patents in a economy that is based on the explosion of knowledge, see Natl. Research Council Natl. Acads., *Patents in the Knowledge-Based Economy* (Wesley M. Cohen & Stephen A. Merrill, eds., Natl. Acads. Press 2003).

¹³ NCURA, GUIRR & IRI, *Summary of First Industry-University Congress* (2003).

Universities and industry are being forced to deal simultaneously with a variety of internal and external pressures. Pressure to compete with each other for profit and prestige is coupled with pressure caused by the shifting tectonics of the industrial and university sectors. Increasing internationalization and globalization is putting pressure upon universities and industry to shake up their traditional ways of doing business, yet universities must not stray too far from their original intents.

This leads to a significant conclusion: while issues of intellectual property, licensing, and contract negotiation are among the most contentious issues in university-industry partnerships, broader questions of culture, good faith, profit, education, economic policy, and social policy are involved. At this point, it is useful to discuss again why universities and industry collaborate in mutually beneficial projects.

IV. WHY DO UNIVERSITIES AND INDUSTRY COLLABORATE?

An understanding of why universities and industry collaborate is essential to improving the relationship over the long term. A review of these reasons leads to the conclusion that these partnerships are complex relationships which require a variety of responses.¹⁴

Universities provide a *ready pool of graduate and undergraduate students* that industry may access for their work demands. In return, students receive essential workforce training that is not available in classroom courses.

Technical opportunities in industry exist for faculty and students that may not exist within the academic setting.

Materials are available in industry for research and educational purposes that may not exist at academic institutions.

Collaborations with industry provide *research funding* for universities at the departmental, school/college, and university levels. A steady stream of research money within universities is a necessary, and some may lament, fact of life. Universities come to rely on the generation of extramural funding as they structure their budgets for future fiscal years.

Collaborations with industry often *advance the service mission of universities*. These missions may or may not be explicitly stated in the charters of individual universities. Regardless, there has been a general

¹⁴ NCURA, GUIRR & IRI, *Industry-University Focus Group, National Council of University Research Administrators Annual Meeting* (2003).

trend over the past generation that universities have become more engaged in service within their communities, however that “service” is defined.

Collaborations provide for *local and regional economic development*. There is also evidence to suggest that university-industry collaborations contribute nationally to the overall economic development of the United States.

Collaborations between university and industry are often *novel to “high” technology* areas, as opposed to “low” technology areas such as basic manufacturing. High technology includes such fields as nanotechnology and materials science and engineering.

At some universities, collaboration with industry is part of their *internal reward structure*. Such structures could provide a positive financial incentive for faculty, which is often essential for research development and retention of “star” faculty.

Universities often have infrastructure that industry wants. For many companies, it is simply more cost effective to contract out research to universities that have the research infrastructure in place rather than building from the ground up or renovating existing research facilities.

Collaboration is encouraged by the federal government. Whether through legislation such as the Bayh-Dole Act of 1980, or through specific grant programs such as the NSF-PFI program, the federal government explicitly or implicitly encourages such partnerships.

Industry outsourcing to universities, to reduce the costs of doing business and increase profits. “Outsourcing” is a major concern in the United States at the present time, particularly with respect to the labor pool, but this version of outsourcing is not receiving much attention in the media.

As this list illustrates, this symbiotic relationship is characterized by both parties receiving benefits from the other. If this system of mutual benefits did not exist, it is highly unlikely that these relationships would continue, certainly to the extent they currently do.

V. BARRIERS TO COLLABORATION

What are the barriers to collaboration? What causes university-industry partnerships to be occasionally problematic? The focus group at

the 2003 NCURA Annual Meeting identified the following culprits:¹⁵

Communication is a major barrier to collaboration. Communication skills differ between and within universities and industry. Needs and expectations are often different between the parties and the failure to communicate them compounds the problem. And the unfortunate fact is that university and industry representatives often have stereotypical visions of the other and that hampers communication for effective project finalization and execution. This also includes the lack of multiple levels of communication within organizations, where different offices within each organization must work together to get the partnership cemented so that the work can progress. This also includes the lack of communication between faculty and staff/administration at the university.

Universities have mixed missions, particularly when it comes to establishing start up companies. The establishment of start up companies with faculty at the center is, in some people's eyes, a significant departure from education, teaching, service, and research. Reasonable minds can differ on this topic, but in the end, this mixed mission can be problematic in dealing with industry partners.

Cultural differences are a major barrier to collaboration. Not only is there the basic legal distinction between both (non-profit educational institutions vs. for profit companies), but there are also cultural differences within universities and industry that have nothing to do with this legal difference. Anyone who has spent a significant amount of time in contract negotiation knows this to be a reality of life.

Secrecy or public dissemination of knowledge is a major difference between universities and industry. By their very nature, universities desire to publish and disseminate the results of their work. Faculty demand and cherish the ability to publish. Companies, on the other hand, are often more secretive about the results of research in the search for competitive advantage and ultimately profit. These fundamental differences of opinion are often reconciled in research agreements, but this still remains a major difference.

Fear factor. Both parties, either through culture, prior experience, or stereotyping, often fear doing work with the other. Perhaps it is the fear of having to divulge information in the partnership, perhaps it is a new partnership. Regardless, fear can be a barrier to collaboration.

¹⁵ *Id.*

Universities overvalue the value of technology or the research they do. This is often a comment made by industry, who feels that faculty often overvalue the work they do on projects. As with many aspects of this partnership, this is to be determined on a case-by-case basis.

Lack of trust. This is another significant barrier that occurs, often in combination with other aspects in this section. This lack of trust occurs within universities and industry and often between these parties. This is particular evident in areas of legal issues and contract negotiation and can be exacerbated by the departure of key personnel in establishing the relationship. This area emphasizes the need for personal, trusting relationships both within the academic institution and with the industry partner.

Financial risk for universities. It is financially riskier for universities to work with industry rather than government. The federal government in particular is seen as a stable source of research money as the federal government is not seen as being subject to the vagaries of the marketplace. Obviously, however, budget cuts at the state and federal levels during periods of fiscal distress does not mean that government is entirely risk free, however. In fact, most federal grants and contracts are awarded subject to the appropriate congressional appropriations.

Faculty oversell projects. Whether intentional or inadvertently, faculty may oversell projects to their universities to secure institutional approval and funding.

Universities lack consistency. By their very nature, universities are fluid organisms. Administration and faculty come and go, making long term partnerships difficult. Agendas may change even if personnel are stable. Public universities are subject to the fiscal legislative process, and private universities have their own unique issues to a certain extent. Whether intentionally or inadvertently, universities can be inconsistent when it comes to industrial partnerships.

Exclusive relationships. As in personal relationships, it is often the case that one party wants an exclusive relationship and the other does not. Some companies want an exclusive relationship and often times universities and their faculty do not.

Conflicts of interest often impede collaboration. At the present time, universities are very much concerned with conflicts of interest (financial and otherwise). How can faculty do research if they are not free of potential conflicts? This concern is particularly important when doing research with industry. No institution, no matter how much money is

involved, wants to become embroiled in a controversy that will tarnish the reputation of the institution. And, given the corporate scandals over the past couple years, it is not likely that companies would want to tarnish their reputations either.

Too much specialization in contract negotiations. It has been pointed out by industry that there is often too much specialization in contract negotiation, evidenced by a technology transfer office negotiating the intellectual property/licensing clauses, and the sponsored program office negotiating the rest of the provisions. This can lead to unnecessary delay in finalizing research contracts. In fairness to universities, however, this sort of problem also exists in companies, where different business units are responsible for different parts of a research or intellectual property agreement. This leads to delays on the industry side. This problem can be compounded by personnel turnover, poor communication, and a shift in agendas.

As one can see, most of these individual points often intersect with others on the list, compounding the barrier. If one seriously looks at this list, it should become apparent that the fundamental barriers to collaboration come out of the fundamental differences between universities and industry and are compounded by the cultural differences within and between universities and industry. This should give one an appreciation for how complex the university-industry relationship is.

VI. MAIN CONTENTIOUS ISSUES

While many university-industry partnerships occur smoothly without complication or conflict, there are certain contentious issues that seem to regularly appear in these relationships. These issues are significant enough to merit the convening of The University-Industry Partnership (formerly known as the Industry/University Congress), discussed below. These issues are the most significant, but this list is not exhaustive:

- A. Communication between universities and industry in the performing of particular projects, including their expectations and concerns.
- B. Long delays in completing contract negotiations for projects, which may also be a function of A., above, which may certainly lead to frustration and a loss of trust between parties.
- C. Negotiation of intellectual property and licensing issues, including issues of ownership, revenue streams, and licensing to third parties. In the experience of the author, negotiation of intellectual property

and licensing provisions in research agreements or intellectual property agreements is the primary reason for the delays in completing contract negotiation, outlined in B., above.

- D. Other legal provisions bearing on the research project or overall collaboration, including liability/indemnification, confidentiality, publication, and international students as a result of the changes after September 11, 2001.

VII. THE UNIVERSITY-INDUSTRY PARTNERSHIP

The University-Industry Partnership (“Partnership,” formerly known as the Industry/University Congress) was established as a multiorganizational initiative between the National Council of University Research Administrators (NCURA), the Government-University-Industry Research Roundtable (GUIRR), and the Industrial Research Institute, Inc. (IRI). The title of this project is *Re-Engineering Intellectual Property Rights Agreements in Industry-University Collaborations*; however, as shown below in the agendas of the Teams, the scope of the Partnership is beyond the realm of IP Agreements.¹⁶

NCURA¹⁷, founded in 1959, is an organization of individuals with professional interests in the administration of sponsored programs (research, education, and training), primarily at colleges and universities. With 4,200 members nationally and internationally, NCURA serves its members and advances the field of research administration through professional development, the sharing of knowledge, and by fostering community among members.

GUIRR¹⁸ is a unit of the non-profit, non-governmental National Academies, based in Washington, D.C.. GUIRR was created in 1984 in response to the report on the National Commission on Research, which called for an institutionalized forum to facilitate dialog among the top leaders of government and non-government research organizations. The need to reduce growing tension between government and universities over procedures for administering federally-sponsored research was a part of the original basis for the creation of GUIRR.¹⁹ GUIRR’s formal mission was

¹⁶ GUIRR, *supra* n. 5.

¹⁷ National Council of University Research Administrators, <http://www.ncura.edu>.

¹⁸ National Academies, *Government-University-Industry Research Roundtable Home Page*, <http://www7.nationalacademies.org/guirr/>.

¹⁹ Natl. Acads., *The Government-University-Industry Research Roundtable Annual Report 19* (2000). The “Florida Demonstration Project” was initially conceived by GUIRR in 1986 to address streamlining the administration of federally sponsored research. Based upon success in Florida, the project was broadened into the Federal Demonstration Partnership (“FDP”), which now counts approximately 300

revised in 1995 “to convene senior-most representatives from government, universities, and industry to define and explore critical issues related to the national and global science and technology agenda that are of shared interest; to frame the next critical question stemming from current debate and analysis; and to incubate activities of on-going value to the stakeholders. This forum will be designed to facilitate candid dialogue among participants, to foster self-implementing activities, and, where appropriate, to carry awareness of consequences to the wider public.”²⁰

The objectives of GUIRR are to: 1) provide a place for candor among national leaders on divisive issues and 2) contribute to national policy by structuring and illuminating issues, and injecting imaginative thought into policy deliberations.²¹ The goal of GUIRR is to improve the research enterprise of the U.S. through discussion among leadership of the three sectors (government, university, and industry) and individual projects designed to inform or change policy.

The IRI²² is the foremost business association of leaders in R&D working together to enhance the effectiveness of technological innovation in industry. Founded in 1938 through the National Research Council, the IRI is comprised of senior executives from a diverse range of industries whose member companies are investing of \$70 billion annually in R&D worldwide. The IRI is the only cross-industry organization providing the R&D community with insights, solutions, and best practices in innovation management developed through collaborative knowledge creation.

With the convening of the Partnership, it must be emphasized that GUIRR and IRI have been involved in a dialog on the issue of university-industry research over the past 15 years. They have published the following:

- A. “Simplified and Standardized Model Agreements for University-Industry Cooperative Research (1988).”²³

university and federal members, including Bradley University. Natl. Acads., *The Government-University-Industry Research Roundtable Annual Report* (2002) [hereinafter *2002 Annual Report*].

²⁰ *2002 Annual Report*, *supra* n. 19, at 2.

²¹ Natl. Acads., *The Government-University-Industry Research Roundtable Annual Report* 1 (1993) [hereinafter *1993 Annual Report*]. For an excellent discussion of recent U.S. industrial performance in a changing world of economics and innovation, see Natl. Research Council Bd. on Sci., Tech. and Econ. Policy, *Securing America's Industrial Strength* (Natl. Acads. Press 1999).

²² Industrial Research Institute, Inc., <http://www.iriinc.org/>.

²³ In the Fall of 1989, GUIRR staff conducted a telephone survey of 70 university and industry users of this publication (known as the “model agreements”). This survey found that the model agreements had become accepted and valuable resources for negotiating university-industry research partnership agreements. The survey also found that intellectual property rights and licensing arrangements are two

- B. “Intellectual Property Rights in Industry-Sponsored University Research: A Guide to Alternatives for Research Agreements (1993).”²⁴
- C. “Industry-University Research Collaboration: Report of a Workshop (1995).”
- D. “Overcoming Barriers to Collaborative Research (1999).”²⁵

These prior efforts have advanced the dialog in the area of university-industry partnerships and have contributed to the improvement of these partnerships. With the addition of NCURA as a national and international voice in the field of research administration, it is hoped that this NCURA/GUIRR/IRI initiative will finally result in systemic improvements to how universities and industry relate to each other.

A. *Mission of the University-Industry Partnership*

The Partnerships’ mission is to explore the current barriers to effective partnerships and seek solutions that will overcome the barriers so that partnerships can succeed. A direct outcome of this endeavor will be the development of, first, a set of principles upon which industry-university collaborations can be built and, second, the development of a nationally accepted array of contractual solutions regarding intellectual property rights. The mission then is at once broad and at the same time specific: effective agreements and negotiations can only occur when the parties understand themselves and the contexts within which they operate. That requires dialog and an understanding of principles. The broad and specific work together in a coherent whole.

B. *Composition of the University-Industry Partnership*

The Partnership is composed of leading individuals from the university, government, and industrial sectors. In addition to the leadership provided by NCURA, GUIRR, and IRI, the Partnership is composed of the delegates from the following institutions, though this list is subject to change as the project develops:

areas that deserved additional attention. GUIRR & IRI, *Survey to Assess the Usefulness of Two Model Agreements for University-Industry Cooperative Research* 12 (1990).

²⁴ 1993 Annual Report, supra n. 21, at 2. Nearly 12,000 copies of this report have been distributed with positive feedback. Richard F. Celeste, former Governor of Ohio, was Chair of GUIRR when this report was released.

²⁵ GUIRR, *Overcoming Barriers to Collaborative Research: Report of a Workshop*, (Natl. Acads. Press 1999). This report was developed pursuant to a workshop held at Irvine, CA on March 23-24, 1998.

University Representatives

1. Cardinal Stritch University
2. California Institute of Technology
3. Carnegie Mellon University
4. Georgia Institute of Technology
5. Massachusetts Institute of Technology
6. The Pennsylvania State University
7. Stanford University
8. University of California at Los Angeles
9. University of Nebraska-Lincoln
10. University of Texas at Austin
11. University of Washington
12. University of Wisconsin-Madison

Government Representatives

1. National Institutes of Health
2. National Science Foundation
3. Office of the Assistant Sec. of Defense, Homeland Defense, Force Planning and Employment
4. Office of Science and Technology Policy
5. U.S. Department of Commerce

Private Sector Representatives

1. Allon Therapeutics, Inc.
2. Corning Incorporated
3. Dow Chemical Company

4. Extrude Hone, Inc.
5. Flow International Corporation
6. Hewlett-Packard Company
7. IBM Global Services
8. Monsanto Corporation
9. National Center for Manufacturing Sciences
10. Venture Law Group
11. II-VI, Inc.

C. *Activities of the University-Industry Partnership*

The Partnership convened for its first meeting in San Francisco on August 19-20, 2003, recognizing that strong university-industry research collaborations are essential for economic and educational reasons. This first meeting was a successful event: 34 delegates began discussions on how industry and universities can better work together. While U.S.-based companies and U.S.-based universities have a history of fruitful research collaborations, changes in the business and technology environment are creating both new opportunities and new challenges for creating successful partnerships.

For more than a day, the delegates to the Partnership brainstormed aspects of this timely issue through a set of questions that were shared with the entire Partnership membership. Partnership membership was divided into four working groups ("Teams") to develop a set of issues and barriers in industry/university collaborations and strategic principles/actions that may be used to overcome barriers and move toward visions of ideal collaborations. Team leaders were appointed to lead their respective teams through continuing conference calls. Since the initial meeting, the following activities have taken place:

- A. Teams have met via conference calls to further develop and add to their principles and action topics. Teams created prioritized lists of these strategic principles/actions. These conference calls periodically continue.
- B. A focus group was convened at the November 2003 NCURA Annual Conference in Washington, D.C. to continue discussions and feedback concerning the partnership.

- C. February 2-3, 2004: Steering Team and Color Team Leaders meeting-Washington, D.C. to formulate a plan for moving Team strategic principles forward. This includes a long term vision covering a background document for decision and policymakers, a training document for practitioners, the development of best practices/demonstration partnerships to address contentious issues and brick walls, and a matrix of circumstances and options. This also includes a short term points and assignments for the Teams to bring to the Second Partnership meeting.
- D. October 14-15, 2004: Second Partnership meeting in Washington, D.C. to continue development and finalization of recommendations. Teams will present their draft documents/proposals and reform teams around the elements of the long-term strategic plan, which may require new participants and resources. After the meeting, new teams will shape draft documents/proposals into working and training tools that will be delivered at the Summit.
- E. Fall 2005: Convening a National Summit in Washington, D.C. of national leaders of industry, university, and government, to be held at the National Academies. This summit will develop and endorse solutions for IP agreements that will foster the creation and commercialization of new knowledge and new technologies while appropriately protecting the interests of all parties.

D. *Team Assignments*

The teams have been working on a variety of assignments that will guide their activities consistent with the overall goals of the Partnership. These are the current assignments for the respective teams:²⁶

A. Blue Team

- 1. Develop a continuing forum for demonstrations of solutions to difficult problems (identify the top ten contentious issues; develop a written proposal for a demonstration to address one of these issues; propose an organizational mechanism for the resolution of university-industry collaboration issues through demonstration projects). *Expected Outcome:* Demonstration partnership to address contentious issues/brick walls (an ongoing forum similar to the FDP).

²⁶ GUIRR et al., *supra* n. 5. These assignments have changed since the inception of the Partnership.

B. Green Team

1. Develop portions of a working educational tool for practitioners, Part I of II (catalogue and explain common agreement types (e.g., consortiums, centers, clinical trials involved, federal funding involved) and known issues that come up in each; catalogue and explain issues that cross all agreement types (confidentiality, indemnification, non-disclosure). Red Team is assigned Part II of II. *Expected Outcome*: Educational training tool for practitioners, incorporating “wisdom” on circumstances and options (as opposed to static templates without explanation).

C. Red Team

1. Develop portions of a working educational tool for practitioners, Part II of II (develop an explanatory catalogue of well-known best practices; develop menu of solutions to identified issues, alongside explanations of tradeoffs among choices; identify known barriers; articulate matrix of non-issues). Green Team is assigned Part I of II. *Expected Outcome*: Educational training tool for practitioners, incorporating “wisdom” on circumstances and options (as opposed to static templates without explanation).

D. Black Team

1. Develop a high level statement of principles that can serve as a “constitution” for university-industry collaborations generally and intellectual property agreements specifically (define the respective missions of the two sectors; define the objectives and constraints relative to those missions; define the principles that would be consistent with all missions, objectives, and constraints so listed). This document will be the basis of a “sign on” effort later in project life. *Expected Outcome*: Background document for decision and policy makers (the “constitution”).

E. Conclusion

The Partnership is the most comprehensive attempt to date to address the university-industry partnership and provide for a long term blueprint for harmonious relationships between universities and industry. Addressing intellectual property and licensing within the overall context of

research and intellectual property agreements will result by itself with the improvement of these partnerships. Negotiations will be less time consuming and less stressful. If this is the case, the parties will be able to concentrate on the reason for the partnership—the research.

VIII. CONCLUSION

So what conclusions can be drawn concerning university-industry partnerships and the attempt by the University-Industry Partnership to improve these relationships?

Given the generally productive yet occasionally contentious nature of these partnerships at the present time, it should be clear that developing harmonious partnerships requires keeping those attributes that work and improving those that do not WHILE at the same time adjusting for environmental changes that occur not only in the private sector and academia but also larger domestic and international social, cultural, and economic changes. These changes are going to require the ability to “dance” at different rates as times change.

This is not to argue, however, that change is going to require academia and industry to dispense with their fundamental attributes. This is not anticipated to happen during the foreseeable future. But change can be accomplished within the larger context of stability and development of these partnerships.

Industry and academia have their work cut out for them. Not only will these relationships continue to expand in scope and number, but they need to work on improving them and minimizing the most contentious aspects of these relationships, primarily in the area of intellectual property. The University-Industry Partnership appears to be making headway in making some lasting, fundamental changes to these relationships, and the next year and a half should be interesting to see how ultimately the Partnership completes its mission.

The odds are good that the ultimate goal of the Partnership and individuals/institutions involved in university-industry partnerships will be achieved: developing harmonious partnerships that benefit all parties while reflecting the ability to adjust to the world around them.