

Cornell University New Life Sciences Strategic Corporate Alliance Plan

Objective: To leverage access to Cornell University intellectual capital including faculty research into major corporate alliances leading to competitive opportunities for select companies and financial support for faculty research and the New Life Sciences funding priorities.

Goal: Secure strategic corporate alliance for the Cornell New Life Sciences with one or more companies in each of the five target industries.

Definition: A strategic alliance is a comprehensive, formally managed company-university agreement centered around a major, multi-year, financial commitment involving research, programmatic interactions, and intellectual property licensing. The substance of the alliance remains to be completed over the agreement period.

Observations:

- Cornell's planned investment (\$500M) in the New Life Sciences infrastructure and new faculty represents an opportunity to attract, interest, and engage companies at a high level over a sustained period.
- Cornell's sustained research expenditures (\$415M in 2001) represent to prospective partners significant investment, a strong infrastructure, committed administration, and potential commercial opportunity in genomics, proteomics, bioinformatics, pharmacogenomics, devices and plant science.
- Cornell can offer to a company basic research over a broad landscape (mammalian, microbial, plant, computational genomics, etc.); unique strengths especially in plant science, materials, and nanotechnology/ nanobiotechnology; unique facilities; a proven track record of interdisciplinary research including multi-disciplinary national research centers, e.g., Biotechnology Institute, Center for Materials Research, High Energy Synchrotron Source, Nanofabrication Facility, Nanobiotechnology Center, Theory Center, Developmental Resource for Biophysical Imaging and Optoelectronics; and a reputation for outstanding scholarship and research.
- While the Cornell culture favors the traditional approach to company-university research, i.e, non-strategic ties with individual faculty, New Life Science faculty support a strategic corporate alliance concept that aids research and builds infrastructure.
- Companies are willing to engage in company-to-company and company-to-university alliances to share costs, increase R&D productivity, boost pipelines, acquire new technology, and supplement internal research, e.g., Eli Lilly's strategy of "innovation without walls."
- Since Cornell has few long-term bioscience relationships, the quality of its science and the potential for commercial advantage will be decisive factors in developing these relationships.

- Companies have an increasing need for the “new life scientists” and Cornell is the nation’s largest producer of undergraduates who go on for PhD’s in the Life Sciences (National Science Foundation).
- Weill Medical College participation with Cornell Ithaca could be quite significant in strategic company agreements based upon research activity; the College’s contacts in prospective companies are an added advantage. The Johnson School’s participation might offer unique benefits to companies such as new business models.
- Universities can secure large multi-year research-based agreements from companies in industries ranging from pharmaceuticals and biotechnology to automotive and computing, but compelling science and cultural blending are central to the success of such alliances.
- A university-company alliance must be based upon what is strategic for the company’s businesses; however, the company’s needs do not dictate the university’s research interests or directions. The challenge is to identify and match the company’s strategic needs and the university’s strengths.
- While faculty research support is foremost, philanthropic support including term professorships, graduate fellowships, and infrastructure development are feasible when they support the objectives of an alliance.
- Acquiring, using, and improving a partner’s cutting-edge equipment should be considered in potential alliances with companies.
- The biotech industry is gradually consolidating. Biotech - to - biotech alliances are increasing more rapidly than biotech - to - pharmaceutical alliances. With patent expirations and less than robust pipelines, pharmaceutical companies have acquired or formed alliances with biotech firms which are themselves advancing many products to later stages of development.
- Pharmaceutical alliances with biotech companies generally involve a small up-front payment by the partner followed by milestone-based payments and royalties or profit-sharing. University agreements involve a multi-year funding with potential for intellectual property licensing.
- Genomics and drug discovery are popular areas for biotechnology alliances. Alliances in pharmacogenomics, proteomics, and informatics are rising steadily. Both US and European pharmaceutical companies are active in establishing alliances with biotechnology companies. Most biotechnology companies do not have the resources to fund university alliances.

Alliance Plan Strategy

I. Organization

Form a Cornell Strategic Corporate Alliance Team to secure strategic alliances with companies, negotiate the agreement, manage post-agreement activities, negotiate intellectual property licensing, and maintain the relationship.

- *Research* -- Robert C. Richardson, Vice Provost for Research
- *Strategy Development* -- Inge T. Reichenbach, VP, AA&D
- *Alliance Negotiations* – Richardson/ Reichenbach/ Adler/ President:CRF
- *IP Negotiations* -- President, Cornell Research Foundation
- *Management* -- Kraig Adler, Vice Provost for Life Sciences
- *Legal Counsel* – James J. Mingle, University Counsel
- *Staff Support* – Nick Komanecky, Denise Clark, Paul Carey

Engage Two Advisory Groups. (1) **Research Subcommittee** provides advice on the overall strategic plan from company identification, contacts and negotiation through licensing and legalities. (2) **Industry Advisory Group** comprised of Cornell alumni with industry-specific knowledge will counsel the Cornell team on industry factors, prospective companies, research, contacts, company strategy, applicable Cornell research, and tactics.

Form a Faculty Review Team from New Life Sciences faculty to review and approve each partnership, Memos of Understanding, and faculty member participation. They would also help guide post-agreement alliance management. With Weill Medical College participation, a member of the College's faculty would be invited to serve on the Faculty Review Team. Academic deans would review proposed strategic partnerships.

Form a Negotiations Team to develop a Memorandum of Understanding, plan for the negotiations, and carry out the process with prospective companies.

II. Preparation

Apply Partners HealthCare's six-step process of "moving technology:"

- Define our goals;
- Understand our own intellectual capital and research direction;
- Identify which companies should use the relevant technology;
- Understand the companies' relative strengths/ needs;
- Create a marketing plan (approach strategy);
- Communicate at the highest meaningful strategic level with a potential player. Work the system at the top. Bypass the corporate licensing office until the outlines of mutual interests are defined and agreed.

Actively search for opportunity through faculty-company connections, industry advisors, alumni, and secondary-research scans.

Identify prospective companies (*Appendix A*) for strategic alliances in five key bioscience-related industries, and other industry sectors:

- Ag Biotech (plant and animal)
- Bioengineering (devices, nano, biomed, biochips)
- Food (human and animal) production, distribution, and safety
- Information (bioinformatics, database management)
- Pharmaceuticals

Additionally, identify companies in the Computing and Information Science industry for possible alliances involving Cornell computing and information science faculty. As appropriate, expand the alliance concept to other industries related to or beyond the scope of the New Life Sciences.

Develop profiles of prospective strategic alliance corporations, including Cornell connections, business strategy, biotech/genomics research interests, key personnel, and research and development expenditures.

Conduct an analysis of Cornell relationships associated with company prospects including senior management, board memberships, and alumni.

Critically review Cornell bioscience/nanobiotechnology research to identify compelling work in each of the Focus Areas (*Appendix B*) vis'-a-vis' prospective partner companies. Technologies, either as enabling or product, can be assessed on two attributes: breadth of technological application and degree of complexity. Breadth is measured in terms of number of disease areas that it can be applied to; the greater number of applications the greater the commercial potential. Complexity is measured in terms of technical hurdles that must be overcome to generate a commercial product, and the cost of developing a particular technology.

Develop communications materials including a Power Point overview presentation of Cornell research capability, infrastructure, and culture; a flexible Power Point presentation which explains Focus Areas and faculty research within them, especially those relevant to a company's R&D and strategic business interests; and a prospectus for each negotiation with Cornell Research Foundation assistance.

Keep faculty representing NLS Focus Areas and Academic Deans engaged in the Strategic Alliance initiative. Hold regular meetings with faculty. Seek faculty knowledge of company research interests, business strategies, and connections within prospective companies. Have Faculty Review Committee guide formation of alliances and post-contract alliance management. Present proposed corporate strategic alliances to academic deans for discussion and review during Provost's Academic Deans Group meetings.

III. Approach Strategy

Develop an approach strategy (marketing plan) for each prospective partner that is based upon its business needs, capabilities and culture; considers Cornell connections; advances Cornell's most compelling research; and initiates contact at the highest level in the company by

senior Cornell administrators. Cornell will seek agreement to an individualized Memorandum of Understanding as a precursor to a formal agreement; support staff will work out the details and obtain legal review.

Identify the client. Determine who in the company, e.g., Senior Vice President – Research & Development, would be the recipient of Cornell’s research.

Hold initial exploratory meetings. Hold one or more meetings with company representatives to learn the company’s needs and interests; communicate philosophy, objectives and strategies; provide an overview of Cornell’s research and interests, and discuss how an alliance would be in mutual best interest. Involve the Vice Provost for Life Sciences and/or faculty where applicable and feasible. If the parties conclude that discussions are warranted, a mutual non-disclosure agreement may be initiated.

Create for each company a Memorandum of Understanding (MOU) of key elements of proposed relationship (see Appendix C) approved by the Faculty Review Team, academic deans, and reviewed by Cornell Legal Counsel. The Cornell Team will develop a one-to-two page MOU conceptually -- what *we want to do* – and base its content on field of focus rather than personnel. The MOU identifies the expectations of the parties and source(s) of alliance funding. The MOU is not legally binding, and it should have a “drop-dead” date. A legal review will be conducted. Following MOU approval by senior management, the company team will be expected to negotiate the contract to completion and establish the optimal structure and processes to achieve the alliance objectives.

Assess market potential of Cornell Research. Engage the Cornell Research Foundation to preliminary assess the market potential of Cornell research for early discussions.

Assist company scientists in evaluating Cornell research as they initiate due diligence that, among other things, will help strategic, operational and cultural fit. A company team may visit faculty, hear presentations, and assess the research

IV. Negotiations

The goal of the Cornell team is to obtain agreement with senior company officers on a Memorandum of Understanding specifying major terms of the transaction; it will also negotiate the contract agreement with either the same officers or functional and/or staff managers. They will be guided by federal guidelines and regulations, and Cornell principles (Appendix D) in the negotiations process. The team will negotiate the scope of the research, financial commitment, payment schedule, duration, alliance management structure, responsibilities, measurements, deliverables, and exclusivity.

The contract will have a “kick-out” clause if the company or Cornell fails to meet its commitments. The contract will also allow for flexibility if focus of research interest changes.

Cornell seeks from a Corporate Strategic Alliance:

- Financial commitment over a defined period of time for research and for New Life Science funding priorities;
- Full overhead for research conducted within corporate alliance;

- A philanthropic portion for educational funding, e.g., fellowships, term professorships, building, etc.
- Opportunity to acquire materials for research;
- State-of-the-art equipment;
- Company interest in potentially licensing research;
- Opportunities for faculty and/or students to work in industry.
- Access to corporate partner's technology.

In addition, Cornell negotiators will consider applicable elements of PHS' strategy which seeks:

- Shared research (technology and results)
- Educational programs
- Access to corporate partner's technology
- Funding of graduate or post-doctoral fellows
- Funding of laboratories
- Supply of/funding for purchase of sophisticated equipment
- Management of each relationship by a joint steering committee

Among the benefits (*see Appendix C, F*) Cornell will offer companies are:

- A wide window into Cornell's New Life Science research with access to groups of researchers in Focus Areas of interest to the company;
- Opportunity to engage in multiple research projects;
- First look at discoveries;
- Opportunity to engage in faculty Requests- for- Proposals;
- Research flexibility allowing for change in research direction as needs and interests change;
- A time-limited first option to negotiate a royalty-bearing exclusive license to resultant inventions or discoveries;
- Agreement that Cornell will not enter into research sponsored by competitors that involves the same investigator and similar work;
- Shared management of the Alliance via Joint Steering Committee;
- Preferred status access to facilities, faculty and students; Cornell will arrange opportunities for company employees' training;

The negotiations team is comprised of the Vice Provost for Research, Vice Provost for Life Sciences, the Vice President, Alumni Affairs and Development, and the Director of the Office of Sponsored Programs. The team is supported by Cornell Legal Counsel, President of Cornell Research Foundation, the Director of Economic Development, the Director of Corporate Relations, cognizant academic deans, and faculty participating in corporate strategic alliances. Guidance and counsel is anticipated from the Industry Advisory Group and the Research Subcommittee of the Board of Trustees.

The Cornell Research Foundation will help establish the market potential of Cornell research by preparing a comprehensive prospectus for use during the negotiation process. This document makes the business case and includes select Cornell research projects (IP status, commercial positioning, competition, prospects for technology to displace technology, supporting data etc.) Cornell Research Foundation and other support staff will critically review Cornell's negotiations position to determine strengths and weaknesses, fall-back positions, uncover gaps in available data, and anticipate likely questions. It will also present the argument of a Cornell University alliance versus an alliance with other higher-education institutions.

If the alliance is mutually satisfactory, Cornell may wish to continue for an additional period(s). However, termination provisions will be spelled out including who is entitled to terminate and why, whether the whole alliance ends necessarily, and the rights and duties of the parties upon termination.

V. Alliance Management

Successful alliances require leadership, compatible objectives, attention to the strategic needs of both institutions, cultural mesh, good integration, flexibility, information exchange, and effective governance, in addition to leading-edge research. Cornell will determine who supplies what to whom initially and how and under what circumstances the arrangements can be changed. (See *Appendix E*)

- Clear determinations of decision-making will be made. A company-university Joint Steering Committee will be formed, led by a Cornell and company representative. The Vice Provost for Research will have overall responsibility for management of all alliances and will engage cognizant academic deans and center directors to help develop and maintain optimum relationships with Alliance company representatives. In Life Science Alliances, the Vice Provost for Life Sciences will have responsibility for managing Life Science Alliances. The Dean for Computing and Information Science will have overall responsibility for alliances involving companies in the computing and communications sectors.
- Faculty will submit proposals for Alliance research funding through a request-for-proposal process on a competitive basis to the Joint Committee.
- Full overhead will be charged to corporate alliance companies, and agreements will include a philanthropic portion for educational funding, e.g., fellowships, term professorships, building, etc., in support of Cornell's education and research mission. Level of support will be negotiated on a case-by-case basis with the size of company and specific alliance goals serving as key determinants.
- Opportunity to acquire materials for research;
- A new position, Director of Strategic Alliances, will report to and assist the Vice Provost for Life Sciences with stewardship by coordinating the faculty RFP proposal process, budgeting, reporting, and keeping companies fully engaged, e.g., facilitating symposia, arranging visits, and assisting in placing company researchers in residence at Cornell. He or she will maintain close communication and coordination with others at Cornell, and

also help bridge the culture gap by encouraging mutual trust and synergy among scientists.

VI. Licensing

Licensing of Cornell intellectual property rights resulting from an Alliance will be conducted by staff of the Cornell Research Foundation (CRF). License agreements will specify the terms and conditions under which a company may take actions that would otherwise infringe on Cornell's intellectual property rights. Principal terms will include the rights being licensed, where and for what purpose the rights may be exercised, and the consideration that the licensor will receive.

- CRF will evaluate the market potential of a discovery. It receives invention disclosure from the inventor and a CRF case manager will communicate information to the company sponsor or contact. The Company will be given 60-90 days to review the discovery for possible licensing.
- If the company elects to license the invention or discovery, the CRF case manager will execute a limited confidentiality agreement (CDA) prior to exchanging proprietary information.
- License negotiation or option agreement granted (date established for license negotiation).
 - Exclusive license to inventions.
 - Non-exclusive license.
- License Agreement. Includes up-front fees, running royalties, diligence milestones, and minimum royalties.

Cornell should remain flexible and open to consideration of other forms of alliance arrangements and compensation including royalty-free alliances and assumption of equity positions in companies.

VII. Institutional Memory

Capture and maintain an information data base of Alliance knowledge to recycle into subsequent Alliance initiatives. The Director of Corporate Alliances will gather information, accessible by Cornell faculty and staff, on approach, negotiations, alliance management, relations management, and licensing processes, to build the university's institutional memory for improving subsequent strategic corporate alliance initiatives.

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