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 related infrastructure.

Goal: Secure strategic corporate alliances for the Cornell New Life Sciences with one or more companies in each of five initial target industries. Also, capitalize on non-New Life Science alliance opportunities where Cornell has unique strengths.

Definition: A strategic alliance is a comprehensive, formally managed company-university agreement centered around a major, multi-year, financial commitment involving research, programmatic interactions, intellectual property licensing, and other services.

Observations:

- Cornell’s sustained research expenditures ($465M in 2002) represent to prospective partners significant investment, a strong infrastructure, committed administration, and potential commercial opportunity, especially in genomics, proteomics, bioinformatics, pharmacogenomics, devices and plant science.

- 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 can offer to companies cutting edge-basic research over a broad landscape (e.g. mammalian, microbial, plant, and computational genomics.); unique strengths especially in plant science, materials, and nanotechnology/nanobiotechnology; unique facilities; a strong track record of interdisciplinary research including multi-disciplinary national research centers, e.g., Biotechnology Institute, Center for Materials Research, High Energy Synchrotron Source, Nanoscale Facility, Nanobiotechnology Center, Theory Center, Developmental Resource for Biophysical Imaging and Optoelectronics; and a reputation for outstanding scholarship and research.

- 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.”

- 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).
• While traditional single academic scientist-to-industrial scientist relationships will continue, a focused effort to secure broader, strategic alliances will benefit larger numbers of faculty and improve their combined research infrastructure. Faculty research support is foremost but philanthropic funding, including term professorships, graduate fellowships, new or renovated facilities, and equipment, is feasible when it supports the aims of an alliance.

• The Alliance Plan should include the Weill Medical College in alliances that touch upon the life sciences or human health care. Cooperation and collaboration between the Medical College and Ithaca are essential in order to maximize the intellectual and economic benefits of relevant alliances and make an alliance more appealing to prospective company partners.

• The leadership of all colleges should be committed to the basic principles of strategic alliance development, implementation and management processes. The synergy inherent in Cornell’s interdisciplinary structure and supportive climate is a great advantage.

• 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. Since Cornell has minimal long-term company bioscience relationships, the quality of its science and the potential for commercial advantage will be decisive factors in developing relationships.

• A university-company alliance must be based upon what is needed by 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 Cornell’s research strengths.

• Acquiring, using, and improving a partner’s advanced equipment should be a consideration 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 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 U.S. and European pharmaceutical companies are active in establishing alliances with biotechnology companies. Most biotechnology companies do not have the resources to fund university alliances.
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, OTL
- IP Negotiations -- President, Office of Technology Licensing and Economic Development
- Management -- Kraig Adler, Vice Provost for Life Sciences
- Legal Counsel – James J. Mingle, University Counsel
- Staff Support – Nick Komanecky, Christopher Miller, Denise Clark

Staff work will be conducted by the Office of University Corporate Relations. When alliances are secured and project management is required, a Director of Corporate Strategic Alliances will be hired and staff added in proportion to need.

Engage Two Advisory Groups:

1. The Research Subcommittee of the Board of Trustees provides advice on the overall strategic plan from company identification, contacts, and negotiation through licensing and legalities. Subsequent to the initial Plan draft, the Subcommittee issued Considerations and Principles Regarding Strategic Alliances. (See Appendix A)

2. An ad hoc Industry Advisory Group comprised of Cornell alumni possessing industry-specific knowledge will counsel the Cornell team on such industry intelligence as prospective companies, research, contacts, management strategy, applicable Cornell research, and approach tactics.

Form a Faculty Review Committee to approve Memos of Understanding and contracts and help guide post-agreement alliance management. The Trustee Research Subcommittee recommended a Local Advisory Committee of the Faculty Senate (LAC) serve as the internal faculty monitoring board and review all Strategic Alliance agreements before they are completed. (See Appendix B) With Weill Medical College participation, a member of the College’s faculty would also serve on the Faculty Review Committee. In addition, academic deans would review proposed strategic partnerships.

Form a Negotiations Team to develop a Memorandum of Understanding and plan and carry out negotiations with prospective companies. They will be supported by the Office of Technological Licensing and Office of Sponsored Programs.

Strategic Corporate Alliance structure formation, implementation, negotiations, and post-agreement management, will be guided by existing Cornell University principles. (See Appendix C) in addition to Trustee Subcommittee Considerations and Principles.

Explain the Strategic Alliance concept to faculty groups beginning with those involved in the New Life Sciences. Conduct a series of meetings with academic deans.
II. Preparation

*Apply the Cornell Corporate Strategic Alliance Planning Model* *(See Appendix D)* and use Partners HealthCare’s six-step process of “moving technology”:

- Define goals;
- Understand 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.

**Aggressively search for opportunities** through previous sponsored research, faculty-company connections, industry advisors, alumni, and secondary-research scans. Determine applications of Cornell research strengths.

Identify prospective companies *(See Appendix E)* 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

The list will remain dynamic as new information is sourced. Additionally, expand the alliance concept to other industries beyond the scope of the New Life Sciences where Cornell might apply its significant and growing strengths, e.g., computing and information, finance, training and education, etc.

**Critically review Cornell bioscience/nanobiotechnology research** to identify compelling work in each of the Focus Areas *(See Appendix G)* vis-à-vis prospective partner companies. Technologies, either as enabling or product, can be assessed on two attributes: breadth of technological application and degree of complexity. With regard to medicine, 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.

**Engage faculty representing NLS Focus Areas and Academic Deans in the Strategic Alliance initiative.** Hold regular meetings with New Life Science Initiative faculty leadership. Seek faculty knowledge of company research interests, business strategies, and connections within prospective companies. Have Faculty Review Committee (i.e., LAC) 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.
**Develop communications materials** including: a Power Point overview presentation of Cornell research capability, infrastructure, and culture; a flexible Power Point presentation that explains Focus Areas and faculty research within them, especially those relevant to a company’s R&D and strategic business interests; a prospectus for each negotiation with assistance from the Office of Technology Licensing; and a brochure that explains the Cornell Strategic Corporate Alliances initiative.

**III. Approach Strategy**

**Develop comprehensive profiles of prospective strategic alliance partners**, including management and board of director personnel, business strategy, Cornell alumni, research and technology interests and needs, current academic/ or business alliances, and research and development expenditures. Seek Cornell faculty knowledge of company’s research interests and employees. Central to a company profile will be a “match-up” (*See Appendix F*) for side-by-side comparisons of a company’s known or anticipated research/technology needs and related Cornell faculty research. The Offices of Sponsored Research and Technology Licensing will review “match-ups” to ascertain potential faculty research conflicts with current or pending commitments.

**Develop an approach strategy (marketing plan)** for each prospective partner that is based upon the company’s business needs and culture; that considers Cornell connections (senior management, board memberships, key employees, alumni); that advances Cornell’s most compelling research related to the company’s need; and that assigns company contact at the highest meaningful level by senior Cornell administrators.

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

**Initiate exploratory meetings.** Initiate meetings with company representatives through board members, senior management or appropriately placed staff, to learn the company’s needs, technical and other interests, objectives and strategies. Provide an overview of Cornell’s research capabilities, and discuss how an alliance would be in mutual best interest. Involve the Vice Provost for Research and/or faculty where applicable. 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 (*see Appendix H*) which will be approved by the Faculty Review Team (LAC) and relevant 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. It 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.

**Assess market potential of Cornell research.** Engage the Cornell Office of Technology Licensing and Economic Development 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. Negotiation

The initial goal of the Cornell team is to obtain agreement of senior company officers on a Memorandum of Understanding specifying major terms of the transaction. The related, primary goal is to negotiate terms with either the same officers or functional and/or staff managers resulting in a contract. The team will be guided by federal guidelines and regulations, and Trustee and Cornell principles (Appendix A, C) during negotiations. The team will negotiate the scope of the research, other services, e.g., training, 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 other services, e.g., training;
- Full overhead for research conducted within corporate alliance;
- A philanthropic portion for educational funding, e.g., fellowships, term professorships, building, laboratories, 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’s 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 H, I) Cornell may 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 beyond the scope of any one investigator;

• First look at discoveries;

• Opportunity to engage in internal 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;

• Facilitated access to facilities, faculty and students;

• Cornell will arrange opportunities for company employees’ training.

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

The Office of Technology Licensing and Economic Development 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.) The Office of Technology Licensing and Economic Development and other support staff will critically review Cornell’s 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 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 J)*

- 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 working responsibility for managing alliances. Management responsibility may change, e.g., the Dean for Computing and Information Science may have overall responsibility for managing alliances in the computing and communications sectors.

- The Joint Steering Committee will review and select faculty proposals for funding.

- Faculty will have an opportunity to acquire materials for research.

- A new position of Director of Corporate Strategic Alliances will be created to assist the Vice Provost for Life Sciences, in Life Science alliances, by coordinating the faculty RFP proposal process, budgeting, reporting, and keeping companies fully engaged, e.g., facilitating symposia, arranging visits, and placing company researchers in residence at Cornell. He or she will look for opportunities to keep the alliance company involved, will maintain close communication and coordination with Cornell faculty, and will help bridge any culture gap by exhibiting and encouraging mutual trust and synergy among scientists.

VI. How Alliances Will Work Within Cornell

Cornell will receive from alliance companies annual funds for the duration of the agreement for faculty research and related philanthropic needs. Full overhead will be charged to corporate alliance companies. Agreements will include a philanthropic portion for educational funding, e.g., fellowships, term professorships, building, etc.

Faculty will receive RFPs and will apply for these funds by submitting proposals on a competitive basis to the Joint Steering Committee through the Director of Corporate Strategic Alliances. The Committee will meet and select proposals for funding but will not control or direct research or control faculty publishing. Regular faculty research reports will be required and interactions with company representatives encouraged. The company will receive the right of first refusal on any patents that might result from the work funded. The Office of Technology Licensing and Economic Development will patent discoveries and negotiate licensing.
VII. Licensing Discoveries

*Licensing of Cornell intellectual property rights resulting from an Alliance* will be conducted by the Office of Technology Licensing and Economic Development. 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.

VIII. Institutional Memory

*Capture and maintain a database of Alliance information* 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.