SERVICING AGREEMENT

AGREEMENT made this_____ day of_____, 1988, between_____(hereinafter called "University"), and University Science, Engineering and Technology, a Delaware corporation, with principal offices at 1465 Post Road East, Westport, Connecticut 06880 (hereinafter called USET);

W I T N E S S E T H:

WHEREAS, it is contemplated by the parties hereto that UNIVERSITY will own rights to technology made by its employees and others in accordance with its policies and procedures and that UNIVERSITY will have the full and exclusive right to license or have licensed on its behalf such technology;

WHEREAS, UNIVERSITY desires that certain technologies which UNIVERSITY may hereinafter obtain during the term of this AGREEMENT be utilized in such a manner as to develop their commercial utility and to develop the maximum reasonably obtainable income both in the interests of UNIVERSITY and the public, and that such rights be administered in an effective manner;

WHEREAS, USET has been organized under the laws of the State of Delaware for the purpose of commercial exploitation and administration of technology and is willing to undertake such functions under the terms set forth in this AGREEMENT.

NOW, THEREFORE, for good and valuable consideration, the receipt whereof is hereby acknowledged, and the mutual performance of the undertakings herein, it is agreed by the parties hereto as follows:

Section 1. Definitions

A. The term "Inventors" shall mean UNIVERSITY's faculty (including Research Investigators), and staff members, and other persons from whom UNIVERSITY may acquire title to technology in accordance with its policies.

B. The Term "Technology" shall mean inventions, invention disclosures, know-how, trade secrets, software, biological, chemical and engineering materials, whether or not subject to intellectual property protection, patents and patent applications all acquired by the UNIVERSITY after the date of this AGREEMENT but excluding divisions, continuation, or continuations-in-part of patents or patent applications or reissues of patents acquired by the UNIVERSITY prior to the date of this AGREEMENT. In addition, the term shall include disclosures of specific research projects that the UNIVERSITY believes may result in any of the above categories of technology and for which project the UNIVERSITY is seeking funding from the private sector.

C. The term "Intellectual Property" shall mean patents, copyrighted technology, trade secrets or the protection of semiconductor chip products.

D. "Technology covered by this AGREEMENT" shall mean technology which arises during the term of this AGREEMENT which USET elects to administer in accordance with this AGREEMENT and other technology which the parties hereafter mutually agree to administer in accordance with this AGREEMENT.

Section 2. Obligations of USET

USET, from and after the date of the AGREEMENT, shall perform the following services for UNIVERSITY:

A. USET shall begin, with reasonable diligence and with the cooperation of UNIVERSITY, and thereafter shall pursue, at its expense an educational program for University staff and Research Investigators describing the USET services available to the University, the benefits of managing University technology and the process of identifying, protecting and licensing such technology. USET shall also, upon request by UNIVERSITY provide consulting services to University on intellectual property issues in connection to specific University technology or research grants and contracts.

B. USET shall enter into a program of licensing (and when appropriate assignment of) technology covered by this AGREEMENT, on the basis of the technology's commercial potential, the availability of intellectual property protection and reasonable

corporate prudence. USET shall consult, as appropriate, with UNIVERSITY administrative personnel and the Inventor(s) in order to plan such licensing strategies for such technology. USET shall further consult with appropriate UNIVERSITY administrative personnel prior to assignment or grant of exclusive licenses on technology covered by this AGREEMENT; provided, that USET shall have final authority to implement license strategies and grant licenses.

C. USET shall provide licensees, prospective licensees and assignees with information obtained from UNIVERSITY in order to permit more profitable return to UNIVERSITY from the administration of technology covered by this AGREEMENT.

D. USET employees and/or consultants shall visit UNIVERSITY and interview Inventors at the UNIVERSITY within the framework of UNIVERSITY's present administrative procedures on a regular basis, and UNIVERSITY agrees fully to cooperate with such USET employees and consultants.

E. USET shall provide periodic written status reports regarding its activities hereunder to UNIVERSITY during the term hereof.

Section 3. USET's Rights

A. UNIVERSITY agrees that it will not hereafter, during the term of this AGREEMENT, without the express written consent of USET execute any license or take any other action contrary to the rights granted or to be granted to USET in accordance with the terms of the AGREEMENT.

B. Nothing contained herein shall authorize either USET, or any of its licensees to use UNIVERSITY's name in any advertising or advertising of products or processes licensed hereunder without the prior specific written authorization of UNIVERSITY; however, USET may advise others of the sources of technology covered by this AGREEMENT and may disclose the existence of this AGREEMENT.

Section 4. Management of Technology

A. It is recognized by the parties hereto that subsequent to the execution of this AGREEMENT and thereafter that the UNIVERSITY will receive disclosure of technology from UNIVERSITY Inventors in compliance with University policy. All such disclosures of technology shall be promptly submitted in writing to USET during the term of the AGREEMENT for evaluation of its commercial potential.

The parties recognize that, by virtue of the activities of USET's employees, that USET may from time-to-time receive technology disclosures directly from UNIVERSITY's employees. In such event, USET shall provide copies of such disclosures to UNIVERSITY and will evaluate them as described above.

B. At the time of submitting a [redacted] technology disclosure to USET, or within thirty (30) days after USET notifies UNIVERSITY that USET has received same from UNIVERSITY's inventors, UNIVERSITY shall advise USET of any outstanding commitments or obligations which might prevent such technology from being subjected to this AGREEMENT or might limit USET's ability to license or otherwise convey rights thereto, and shall advise USET of any publication (including the date thereof) pertaining to such technology (and shall provide USET with a copy of such publication if reasonably possible.)

C. UNIVERSITY grants to USET the right to disclose to actual or potential licensees, information regarding a technology, upon condition that the disclosure is accomplished in a manner and form sufficient to protect and safeguard the prospective intellectual property rights thereto, and, subject to the aforesaid condition, UNIVERSITY waives any claim relating to USET's disclosures made during attempts to license said inventions.

D. USET will notify UNIVERSITY in writing within six (6) months from a complete disclosure of a technology from UNIVERSITY, whether or not USET elects to administer such technology in accordance with this AGREEMENT.

USET will notify UNIVERSITY within sixty (60) days of the receipt of an incomplete disclosure of a technology on the information needed for complete the disclosure, and such disclosures will be held in abeyance pending receipt of such information, at which time such six (6) month period shall commence.

E. In the event USET does elect to administer a technology in accordance with this AGREEMENT, UNIVERSITY agrees to assign and hereby does assign to USET its entire right, title, and interest in and to such technology, subject to any previous commitments made or limitations incurred by UNIVERSITY, as for example, under certain United States Government grants and/or contracts (but no commitments or limitations incurred by virtue of UNIVERSITY's regulations or agreements with its Inventors).

F. In the event USET does not elect to administer a technology in accordance with this AGREEMENT, or fails to give timely notice of its election to administer a technology in accordance with this AGREEMENT, then USET's entire right, title, and interest in such technology shall terminate and the UNIVERSITY shall be entitled to pursue any and all activities related to such technology without involvement of USET.

G. UNIVERSITY retains the right to enter contracts and receive grants in support of research to be performed at UNIVERSITY. If USET elects to administer any technology in accordance with this AGREEMENT which arises from research supported by such a contract or grant containing terms providing preferential treatment of licenses to the contractor or grantor, USET agrees to perform all servicing obligations with respect thereto in accordance with such terms.

H. Within six (6) months following notice by USET of its election to administer a technology in accordance with this AGREEMENT, USET will: (i) complete a patent novelty search for the technology, elect to file a patent application thereon without conducting a patent novelty search or pursue other means of intellectual property protection, or (ii) notify UNIVERSITY of USET's termination of interest therein. Within approximately one (1) year after the six (6) month period referred to in this Section 4(H), USET will either (i) complete the timely filing of a U.S. patent application for the invention, establish other means of intellectual property protection, or (ii) notify UNIVERSITY of USET's termination of interest therein.

Section 5. Patents and Patent Costs

A. Subject to the provisions of Section 4, USET shall, when it deems necessary, promptly file or cause to be filed patent applications in any country or countries of the world, including the United States. Such patent applications shall be filed and prosecuted, and any patents issuing thereunder to Inventions covered by the AGREEMENT received from UNIVERSITY shall be maintained, at no cost to UNIVERSITY. UNIVERSITY agrees to sign or cause to be signed all documents or papers and take any other action necessary to effect such filing and prosecution. In the event USET decides not to file a patent application on an Invention covered by this AGREEMENT, or to abandon a filed patent application or issued patent, it will notify UNIVERSITY of such decision within adequate time for UNIVERSITY to file a patent application or such Invention or continue the prosecution of such application or maintenance of such issued patent, as the case may be, and will promptly transfer all of USET's rights therein to UNIVERSITY, thereby deleting the same from the scope of this AGREEMENT.

B. As to foreign patent rights on Inventions covered by this AGREEMENT, if USET files for foreign patents, USET may first deduct the foreign filing, prosecution, and maintenance cost from royalties or other income derived from the licensing or other handling of the particular Invention or Inventions involved, and the remaining royalties or other income shall be shared as set forth in this AGREEMENT

C. In the event any technology covered by this AGREEMENT becomes involved in litigation, USET will pay the expense of same. USET shall be entitled to deduct its litigation expenses from any recovery or royalties related to the technology that is the subject of the suit, with the balance of the recovery, if any, or the remainder of such royalties, as the case may be, to be shared in accordance with the royalty sharing provisions of this AGREEMENT. Notwithstanding the foregoing, USET may transfer some or all of the power of litigation and the costs thereof to an exclusive licensee under a technology covered by this AGREEMENT and permit the Licensee to set-off its litigation costs from royalties otherwise due. In no event shall UNIVERSITY be required to become a party to any such suit initiated by USET or any licensee without its express permission.

Section 6. Representations and Warranties by UNIVERSITY

UNIVERSITY represents and warrants:

A. That pursuant to its existing intellectual property protection policy of (a copy of which is attached hereto and marked "Schedule A".) it will acquire all rights to the technology, inventions, invention disclosures, know-how, trade secrets, patents and patent application made by Inventors and that it has the full right and power to assign such subject matter to USET hereunder.

B. That it now has the right to enter into this AGREEMENT and intends hereafter to comply with the terms thereof (including without limitation that it will not change its policies in derogation of the rights conveyed and to be conveyed to USET hereunder).

Section 7. Payments and Considerations

A. USET shall collect and receive in its own name all royalties, fees or other remuneration hereafter to be due or accruing by reason of the licensing, sale, litigation or other exploitation of technology covered by this AGREEMENT.

B. With respect to any royalties or other income received by USET for the licensing, sale, litigation or other exploitation of any technology covered by this AGREEMENT, subject to the provisions of Section 5B and C, USET shall retain forty percent (40%) thereof and shall pay over to UNIVERSITY the remaining sixty percent (60%). From its share of such royalties or other income, UNIVERSITY shall compensate the Inventors of UNIVERSITY in accordance with its applicable policy, and USET agrees to pay to UNIVERSITY the sum of Two Hundred Dollars ($200.00) at the time a United States patent application is filed for each Invention covered by this AGREEMENT, provided that only one such payment shall be made with respect to a series of patent applications covering a number of related inventions made by a common Inventor(s), and UNIVERSITY agrees to forward said sum to such Inventor(s) on behalf of USET.

C. All royalties or other payments received by USET and attributable to the licensing of Inventions covered by this AGREEMENT shall be accumulated by USET and amounts due to UNIVERSITY shall be paid to UNIVERSITY semiannually each year on or about each January 15 and July 15, together with an accounting of the source of such amounts.

D. USET shall keep accurate books and records of its income and receipts hereunder and of disbursements, and UNIVERSITY shall have the right to inspect such books and records, at reasonable intervals and at reasonable times.

Section 8. Term

A. The term of this AGREEMENT shall be from the date hereof for a period of five (5) years and shall be automatically renewed for additional one (1) year periods thereafter; provided, however, that either party shall have the right to terminate this AGREEMENT at the end of the initial five (5) year period or any subsequent period thereafter by providing written notice of termination to the other party at least thirty (30) days prior to the end of any such period. Notwithstanding the expiration of this AGREEMENT or earlier termination as provided hereunder, and with respect to any technology covered by this AGREEMENT, this provision hereof relating to such technologies shall survive such expiration or earlier termination until the expiration of the last to expire of any patents issuing on each such technology.

B. If, after three (3) years from the issue date of any patent issuing on an technology covered by this) AGREEMENT, it shall be reasonably determined by UNIVERSITY that USET has failed to produce the maximum utilization or return which might be expected from commercial development of such technology, UNIVERSITY shall, upon sixty (60) days written notice to USET, have a right to reassignment of such technology (including the patent or patents relating thereto). During said sixty (60) day period the parties agree to negotiate concerning alternate procedures to such reassignment, but during said time USET shall not grant any license under the technology covered by said notice without the consent of UNIVERSITY.

If USET desires to dispute the reasonableness of such determination by UNIVERSITY, such dispute shall be shall be settled by arbitration in accordance with the rules of the American Arbitration Association then in effect. The arbitrator's decision as to such reasonableness shall be final and binding upon the parties. Upon maturation of the right to reassignment, USET shall, in fact, reassign to UNIVERSITY by written instrument. The demand for arbitration must be make within thirty (30) days after expiration of said sixty (60) day period and the costs of such arbitration shall be borne by the party who does not prevail.

In the event of such reassignment, USET shall receive and retain a royalty for the life of said technology arising from any license or similar agreement consummated prior to the demand for the recapture of said technology, in the amount it would have received and retained had the technology not been reassigned to UNIVERSITY.

C. In the event of receivership or bankruptcy of USET, or in the event USET shall make an assignment for the benefit of creditors or shall go out of business, this AGREEMENT shall terminate and, in such event all right, title and interest in and to all technologies covered by this AGREEMENT then owned by USET pursuant to and under the terms of this AGREEMENT shall automatically revert to UNIVERSITY. In the event of such reversion, USET shall receive and retain royalties from and for the full term of any licenses or similar agreements consummated prior to the received and retained had the technologies not reverted to UNIVERSITY.

D. If either party shall at any time during the term hereof commit any breach of any material covenant or agreement herein contained, and shall fail to remedy any such breach within sixty (60) days after written notice thereof by the other party, such other party may at its option terminate this AGREEMENT by notice in writing to such effect, in addition to such other remedies as are provided by law.

E. The termination of this AGREEMENT for any cause shall not affect the terms of any licenses, sales or other grants theretofore entered into by USET, and no termination shall relieve USET or its successors of its obligation to pay UNIVERSITY its share of royalties due or to become due or accrued under Section 7 hereof, or shall relieve UNIVERSITY of the obligation set forth in Section 8 B to pay a continuing royalty

attributable to services of USET, the right to which continuing royalty accrued prior to such termination.

Section 9. Miscellaneous

A. This AGREEMENT shall be interpreted and enforced under the laws of the State of Connecticut.

B. Any payment, notice or other communication required or permitted to be made to either party hereunder shall be sufficiently made or given on the date of mailing if sent to such party at its address given below, or such other address as it shall hereafter designate in writing, as follows:

In the case of USET

President
USET
1465 Post Road East
Westport, Connecticut 06881

In the case of UNIVERSITY

President

C. This AGREEMENT shall be binding upon and shall inure to the benefit of the successors or assigns of UNIVERSITY, but USET may not assign this AGREEMENT nor any interest under this AGREEMENT without the prior written consent of UNIVERSITY, except that USET may assign its rights to monies due or to become due hereunder.

MAXWELL RESEARCH FOUNDATION - NATIONAL INSTITUTES OF HEALTH RESEARCH AGREEMENT

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Exhibit A - Agreement of Program Participants A

GREEMENT

This Agreement, effective as of _____, is by and between the parties:

MAXWELL RESEARCH FOUNDATION, a corporation organized under the laws of _____ and having its principal offices at _____ (hereinafter "Foundation")

AND

THE NATIONAL INSTITUTES OF HEALTH, a Bureau of the Public Health Service of the Department of Health and Human Services located at _____ Bethesda, Maryland (hereinafter referred to as "N.I.H.");

WITNESSETH THAT;

WHEREAS, the N.I.H. has sought and continues to seek the advancement of knowledge through research;

WHEREAS, the N.I.H. desires that the useful results of its research be made available to society through established avenues of trade and commerce;

WHEREAS, the Foundation has personnel and facilities for the conduct of research, and the know-how and management skills for the development of new products and processes based on scientific research;

WHEREAS, the Foundation seeks to advance scientific research as a source for products for meeting human needs;

WHEREAS, the N.I.H. recognize that each can benefit from a relationship in biomedical research extending over a span of years that will provide present and potential facilities and financial support for the N.I.H., while enhancing the understanding and work of their respective scientists by close interaction among them;

WHEREAS, the N.I.H. and the Foundation believe that Foundation support of biomedical research can lead to enhancement of their respective capabilities and render important long range benefits to the N.I.H., to the Foundation and to society;

WHEREAS, the N.I.H. and the Foundation believe that biomedical inventions are likely to be brought into public use for public benefit through the incentive of the protection of the Patent System utilized by the parties and made available through the Foundation;

WHEREAS, the N.I.H. and the Foundation recognize that the concept of freedom to publish must be preserved by the Agreement and shall be a guiding principle in its administration;

WHEREAS, the N.I.H. and the Foundation recognize that the N.I.H. guidelines on Conflicts of Interest expresses principles applicable to N.I.H.and Foundation relationships;

WHEREAS, the N.I.H. and the Foundation are prepared to undertake a collaborative effort in the field of biomedicine under the Federal Technology Transfer Act of 1986 and Executive Order 12591 with a focus on _____, where the N.I.H. currently has substantial personnel and facilities for the conduct of research and a field where the Foundation expects to increase its in-house research emphasis; and

WHEREAS, the Foundation proposes to provide significant facility and financial support to the N.I.H. in furtherance of this collaborative effort according to the terms set forth in this Agreement.

NOW, THEREFORE, the parties hereto agree as follows:

ARTICLE I
PURPOSE AND SCOPE OF THIS AGREEMENT

The purpose of the present Agreement is to provide a framework within the Federal Technology Transfer Act of 1986 and Executive Order

12591 to govern conduct of this collaborative effort under which multiple research Projects (as hereinafter defined) can be undertaken. This Agreement is designed to recite the provisions which would apply to all Projects authorized by the Advisory Committee under the Program (as hereinafter defined).

ARTICLE II - DEFINITIONS

2.1 "Program" means all research activities performed by or for the N.I.H. under this Agreement which are authorized and funded by the Advisory Committee (as hereinafter defined) and Program Director from financial and facility support provided by the Foundation.

2.2 "Project" means a specific research activity which has been authorized and funded by the Advisory Committee from financial and facility support provided by the Foundation under the Program. Projects shall be of three types:

a) "Exploratory Projects": Those directed to fundamental research on basic scientific questions with a focus on _____.

b) "Specialty Projects": Those directed to applied research with a focus on _____ and in which the Foundation sees more immediate practical utility either in terms of technologies or products or both. These projects can be conducted within Foundation Research facilities with the concurrence of the Advisory Committee;

c) "Construction and Renovation Projects": Those construction and renovation activities directed to physical facilities required to accommodate and enhance the Program.

2.3 "Advisory Committee" means those representatives of the N.I.H. and the Foundation charged with administering the Program. The Advisory Committee comprises a Program Director who shall be Chairman and appointed by the N.I.H., three (3) additional members appointed by the N.I.H., and four (4) members appointed by the Foundation. All members including the Program Director, shall have voting power.

2.4 "Project Investigator" means the scientist in charge of a Project and responsible for its conduct in accordance with the terms of the Project award and the accepted operating policies and procedures of the N.I.H.. A Project Investigator shall be a N.I.H employee qualified to be a principal investigator on N.I.H. research projects.

2.5 "Technical Developments" means any and all inventions, discoveries, advances, know-how, processes, devices, machines, materials, software and other information arising from the Program, whether or not the same are patentable, copyrightable or otherwise protectable by law.

2.6 "Patent" means any patent, certificate of invention, inventors certificate, utility model or similar form of protection, or plant patent or other form of protection of plant material, granted anywhere in the world covering an invention which is a Technical Development, and owned by the N.I.H. or in which the N.I.H. has assignable rights.

2.7 "Assigned Product" means any product covered by a claim or made by or used in a process covered by a claim of an unexpired Patent at the time and in the country wherein the product is manufactured, used or sold, which claim has not been adjudicated invalid in a final adjudication from which there can no longer be an appeal, and which Patent is assigned to the Foundation as provided for in this Agreement.

2.8 "Agreement of Program Participants" means the specimen agreement set forth in Exhibit A attached hereto.

ARTICLE III - TERM OF AGREEMENT

3.1 This Agreement shall be for a period of five (5) years commencing _____ and terminating _____, unless earlier terminated under the provisions of Paragraphs 4.3, 12.2 or 12.3.

3.2 On or about _____, the parties shall enter into discussions as to whether both parties desire to continue the Program beyond the normal termination date of _____. If continuation is mutually desirable the parties shall proceed with negotiations to arrive at mutually acceptable terms and conditions for such continuation. If continuations is not desired by either or both parties, this fact shall be confirmed in writing before the end of the third year of the initial term of this Agreement.

3.3 If, in accordance with Paragraph 3.2 the parties decide not to continue the Program beyond _____, then the Foundation shall have the option of electing to continue its support, on a Project by Project basis, for any Projects started but not completed during the normal term. the Foundation shall make such elections and the parties shall negotiate in good faith mutually acceptable financial terms and time extensions, not to exceed two (2) years in duration, prior to the expiration of this Agreement. All other relevant terms of this Agreement shall apply to such terminal Project continuations.

ARTICLE IV - PROGRAM ADMINISTRATION

4.1 The Program shall be under the direction of the Advisory Committee chaired by the Program Director, _____, who shall be assisted by the seven (7) other Committee members including three (3) members, namely _____, appointed by the N.I.H. and four (4) members, namely, _____ _____, appointed by the Foundation. The N.I.H. and the Foundation representatives on the Advisory

Committee, other than the Program Director, may be changed at appropriate intervals by either of the parties with timely notice to the other party.

4.2 All actions to approve, defer or disapprove Program activities and to fund new Projects, to provide supplemental or continuation support to previously approved Projects or activities, and to discontinue previously approved Projects or activities shall be taken in convened meeting of the Advisory Committee. Any such action shall require approval of a majority of the members of the Advisory Committee, i.e., at least five (5) of the eight (8) members.

4.3 Should the Program Director or any member of the Advisory Committee be unable to continue service, a replacement shall be promptly appointed by the appropriate party. Program Director replacements shall be mutually acceptable to the Foundation and the N.I.H.; provided, however, that acceptance by the Foundation shall not be unreasonably withheld. If the N.I.H. cannot nominate an acceptable replacement for the Program Director within one (1) month following the inability of the Program Director to continue service, the Foundation may suspend its financial support for the Program until an acceptable Program Director is appointed. If such suspension continues beyond six (6) months, the Foundation may summarily treat this Agreement as breached under provisions of Paragraph 12.2 and the ninety (90) day notice provision of Paragraph 12.2 is not applicable.

4.4 The Program Director shall convene a meeting of the Advisory Committee at least once each calendar quarter and otherwise as frequently as necessary to act on Program matters and pending proposals, to review the financial status and progress of active Projects, to deal with unanticipated problem areas, and to consider other matters concerned with the effectiveness of the Program. Except in an emergency, notice of a scheduled meeting and an agenda therefore shall be issued not less than two (2) weeks prior to any such meeting. Any Advisory Committee member may request convening of special meetings and may have any matter related to the conduct of the Program placed on the Advisory Committee agenda for the next or forthcoming meeting by making such a request in writing to the Program Director sufficiently in advance of the meeting to allow adequate preparation for a productive discussion of the matter.

4.5 The Program Director shall, after each meeting of the Advisory Committee, distribute to all Committee members, whether present at the meeting or not, a written summary of matters considered and actions taken.

4.6 Should a member of the Advisory Committee not be able to attend a given meeting, an alternate representative may be designated by so notifying the Program Director on a meeting by meeting basis. If the Program Director is unable to attend a meeting of the Advisory Committee, he may designate another N.I.H. member of the Advisory Committee to chair the meeting and perform the functions of the

Program Director at that meeting. However, it is understood by the parties that the effectiveness of the Advisory Committee will be promoted by continuity of membership and regular attendance at meetings by members.

ARTICLE V - PROJECT SELECTION AND IMPLEMENTATION

5.1 The Advisory Committee shall decide on both the Exploratory and Specialty Projects which are to be supported under the Program. The Advisory Committee shall strive to identify and fund Projects in which the N.I.H. enjoys scientific leadership and in which the Foundation has a meaningful interest.

5.2 The Advisory committee has ultimate responsibility for identification and selection of all Projects as well as for overall and ongoing direction of the Program. As a general guide, the parties to this Agreement intend for the Program to embrace two (2) types of Projects, namely, Exploratory Projects and Specialty Projects. Ultimately during the term of this Agreement, it is expected that approximately eighty percent (80%) of the research effort would be directed toward fundamental questions (Exploratory Projects) while twenty percent (20%) would be directed toward specific products (Specialty Projects). The parties hereto recognize that facility renovation and construction is to be funded as a Program activity within the limitation of the financial support specified in Article VIII hereof.

5.3 Following the identification of a field of interest by the Advisory Committee the Program Director shall seek Project proposals from N.I.H. investigators functioning within the field of interest described in this arrangement.

5.4 Project proposals, continuations and supplements thereto shall be on forms provided by the Program Director. The Program Director shall provide copies of Project proposals to all members of the Advisory Committee at least one (1) month prior to the Committee meeting at which such requests are to be considered.

5.5 Whenever the Advisory Committee has identified a field of research of mutual interest, and has received an acceptable Project proposal, a Project may be created by the authorization of the Advisory Committee in writing. The Project authorization shall identify the Project Investigator, define the research activities to be pursued, the level of effort to be devoted to the Project by the Project Investigator, include a budget covering all costs of such research, define the time duration, facility use and such other terms and conditions as may be agreed to and be approved by the Project Investigator consistent with the purposes and conditions of this Agreement.

5.6 With concurrence of the Advisory Committee, and in furtherance of productive interaction between scientists of the Foundation and those of the N.I.H., the Foundation representatives on the Committee shall designate a the Foundation Project Scientist who shall act as the primary contact with each Project Investigator during the conduct of a given Project.

5.7 The Program Director shall submit to the Foundation in writing summary reports of all important findings and results as soon as available and detailed annual Program reports on each anniversary of this Agreement. The annual reports shall include summaries and conclusions for each active Project.

ARTICLE VI
INTERACTION BETWEEN THE FOUNDATION AND THE N.I.H.

6.1 To optimize the mutual benefit and collaboration intended by this Program, the parties desire that there be mutually productive and continuing interchanges between N.I.H. and the Foundation scientists. Accordingly, the N.I.H. will ensure that all N.I.H. scientists engaged in the Program are available to appropriate the Foundation scientists for consultation in the area of their respective Projects. Temporary office space at the N.I.H. shall be made available to collaborating the Foundation scientists. Further, selected specialty projects may be undertaken by N.I.H. investigators with Foundation research facilities.

6.2 The N.I.H. agrees to permit individual scientists and technicians from the Foundation, with the consent of the Program Director and Project Investigator and at the Foundation's expense, to spend appropriate periods of time in N.I.H. laboratories where Project research is being conducted to learn techniques developed therein, to participate is mutually desirable, and to facilitate the transfer of Technical Developments to the Foundation. The Foundation agrees that its employees who are permitted to train and function in the laboratories of the N.I.H. pursuant to this paragraph shall be required to observe the applicable policies of the N.I.H..

6.3 It is anticipated that interaction between the Project Investigators and the Foundation Project Scientists will identify facilities and capabilities of the Foundation which may be used by N.I.H. scientists to enhance the progress of Projects. Moreover, it is appropriate that evaluation of the potential of research leads and products be addressed through the interaction of the Project Investigators and the the Foundation Project Scientists.

ARTICLE VII - SCIENTIFIC REVIEW PANEL

7.1 To assess the scientific merit and cost effectiveness of Projects supported by the Program, the parties hereto recognize the need for periodic review by an independent panel of scientists.

7.2 During the third year of the initial term of this Agreement and every two (2) years thereafter, the Advisory Committee shall commission a scientific review panel comprising at least four (4) distinguished scientists, not employees of the Foundation or N.I.H., to review al then-current Project work and to appraise the direction of the Program, both qualitatively and quantitatively. Composition of the review panel should be designed to include scientists having clinical and pharmaceutical orientation as well as academic orientation.

7.3 The review panel shall be required to issue a confidential report to the Advisory committee and to the Director of N.I.H. and the Chief Executive Officer of the Foundation stating its views, conclusions and recommendations regarding the scientific merit and cost effectiveness of the Program and Projects and the impact of the Program on the respective institutions involved.

7.4 Costs of the scientific review shall be paid from Program funds.

VIII - PROGRAM FINANCES

8.1 The Foundation hereby agrees to provide to the N.I.H. for the total support of the Program during the five (5) year term of this Agreement, the total amount of _____, to be adjusted according to Paragraph 8.2, which shall cover both direct and indirect expenses of the N.I.H.. The N.I.H. agrees that this funding shall be disbursed solely in support of the Program.

8.2 Payment by the Foundation to the N.I.H. of the amount specified in Paragraph 8.1 shall be limited to the year budget amount recited in the following schedule which are subject to (i) annual adjustment for inflation in accordance with this Paragraph 8.2, and (ii) budget underruns carried forward from one year to the next with approval of the Advisory Committee in accordance with Paragraph 8.9. The parties hereto believe the following expenditure schedule reflects the appropriate allocation of funds:

Agreement Year	Exploratory Projects	Specialty Projects	Construction and Renovation Projects	Year Budget
82/83	$_____	$_____	$ (See Para.8.4)	$_____
83/84	$_____	$_____	$	$_____
84/85	$_____	$_____	$	$_____
85/86	$_____	$_____	$	$_____
86/87	$_____	$_____	$	$_____
Total	$_____	$_____	$	$_____

The initial agreement year shall run from the effective date of this Agreement through _____. Subsequent agreement years shall run from _____.

The agreement year budgets above recited, commencing with the second agreement year (_____), shall be adjusted using the GNP Deflator Index in the following manner:

(a) A base index will consist of an average of the GNP Deflator Index figures for the four (4) quarters from 19__ through 19__.

(b) An index for each agreement year, commencing with the second agreement year, will consist of an average of the four (4) quarterly GNP Deflator Index figures covering the period April through the following March immediately preceding the start of each agreement year. (For example the index for the second agreement year will be the average of the GNP Deflator Index figures for the four (4) quarters covering _____ 19__ through _____ 19__.)

(c) Each agreement year budget as stated above shall be adjusted prior to the commencement of the relevant agreement year by applying a multiplier derived as follows:

$$\text{multiplier} = 1 + \frac{\text{Agreement yr. index - base index}}{\text{base index}}$$

For purposes of this Agreement the "GNP Deflator Index" shall mean the quarterly revised Implicit Price Deflator for the Gross National Product as reported by the United States Department of Commerce, Bureau of Economic Analysis. Since it is normal for a quarterly GNP Deflator Index to be revised shortly after it is first published, calculations herein shall be based on the final index for a quarter, if available, and otherwise on the most recent revision available on June 1 immediately preceding the start of the agreement year for which calculations are made.

8.3 It is recognized that the occurrence of expenditures during an agreement year is primarily dependent on Project spending plans authorized by the Advisory committee during the current and any prior years. Nevertheless, the Foundation is not obligated to reimburse the N.I.H. for expenditures incurred during, or carried forward into, any agreement year in excess of the total amount of the agreement year budget shown on the expenditure schedule in Paragraph 8.2, as it may have been adjusted under the provisions of Paragraph 8.2 and 8.9, unless the parties mutually agree to modify said total amount by formal amendment to this Agreement.

8.4 All Program funds shall be administered by the Program Director who shall allot funds, with the approval of the Advisory Committee as specified in Article IV, to Project participants. By unanimous consent the Advisory Committee may reallocate among Project types up to 10% of the total funds for any agreement year specified in

the schedule of Paragraph 8.2, as such annual total may have previously been modified by the Foundation under Paragraph 8.3 or by the Advisory Committee under Paragraph 8.9. Such reallocation of agreement year funds may be among the Exploratory Project type, the Specialty Project type and the Construction and Renovation Project type. The Program Director shall monitor spending of funds budgeted for individual Projects and may make adjustments among expense categories of an approved Project budget upon justified requests of Project Investigators. The Program Director shall keep the Advisory Committee informed of financial matters which might indicate a significant departure from Project plans previously approved by the Committee. The Program Director's financial records on all segments of the Program and Projects shall be available for review by any member of the Advisory Committee.

8.5 Approved funds for individual Projects or for support of the Program shall be maintained by the Institute Accounting Services Department with operating responsibility for the project in separate accounts for each such activity. Spending for each account shall be under the direct control of the Program Director or his delegated Project Investigator, respectively, who shall be furnished with the Accounting Services standard monthly statements of spending against their accounts.

8.6 The accounting records of Program activity shall be available for audit by The Foundation, using its own internal or outside auditors, during the normal business hours of the N.I.H..

8.7 The N.I.H. shall submit monthly invoices with supporting details to the Foundation showing actual spending by N.I.H. expense category for each Project for which reimbursement of expenditures is being requested. Each invoice shall also show cumulative expenditures to date for each such Project against the approved Project budget and cumulative total Program expenditures for the agreement year against the current agreement year budget shown on the expenditure schedule in paragraph 8.2 as it may have been previously adjusted under the provisions of Paragraphs 8.2 and 8.9.

8.8 The Foundation agrees to pay the N.I.H. promptly upon receipt and approval of the N.I.H.'s invoices provided under Paragraph 8.7 up to the level of the agreement year budget set forth in Paragraph 8.2, as such agreement year budget may have been adjusted under the provisions of Paragraphs 8.2 and 8.9.

8.9 If in any agreement year there is an overrun of the agreement year budget the excess expenditures shall be carried forward and be paid from the following agreement year budget. If in any agreement year there is an underrun of the agreement year budget (hereinafter in this paragraph "the current agreement year budget"), then with the unanimous consent of the ADvisory Committee the underrun amount may be carried over as an addition to the following agreement year budget. The approved amount from the current agreement year budget which is to be carried over shall be adjusted by a multiplier calculated by dividing the multiplier from Paragraph 8.2 for the following agreement

year budget by the multiplier for the current agreement year budget. The thus adjusted amount to be carried over shall then be added to the following agreement year budget after the following agreement year budget has been adjusted in the usual manner.

8.10 Unless otherwise provided in the project award, title to all items of equipment purchased with Program funds shall vest in the N.I.H. at the time of purchase.

8.11 Upon termination of this Agreement for any reason the N.I.H. shall provide a final accounting of Program funds to the Foundation within ninety (90) days following such termination. During said ninety (90) days the N.I.H. shall liquidate all outstanding obligations incurred prior to termination but shall not incur additional obligations. The balance of funds remaining shall thereupon be returned to the Foundation unless required for completion of Projects in accordance with Paragraph 3.3.

8.12 Indirect costs invoiced under Paragraph 8.7 shall, through _____, 19__, be at a fixed rate of fifty percent (50%) of invoiced direct costs. Indirect costs invoiced by the N.I.H. for any activity performed in whole or in part by any agreementor shall not exceed the indirect costs which would have been invoiced had such activity been performed wholly by the N.I.H.. If the N.I.H.'s indirect costs rise by ten percent (10%), i.e., to fifty five percent (55%) or more, then upon the N.I.H.'s request the Foundation agrees that it will negotiate the N.I.H.'s request to increase the rate of indirect costs from fifty percent (50%) under this Agreement, taking into consideration relevant factors, including relative increases in indirect costs made in other research agreements, including other government agreements.

ARTICLE IX - PUBLICATIONS AND REVIEW OF TECHNICAL DEVELOPMENTS

9.1 The Government members participating in Projects are at liberty to publish the results of their research subject to the provisions of Paragraphs 9.1, 9.2, 9.3, 9.4 and 9.5. Project awards will require that participants provide copies of all abstracts and articles, in the best form then available, proposed to be submitted for publication in sufficient time to permit the Program Director to provide same to a Foundation member of the Advisory Committee at least one (1) month prior to submission to a publisher or other third party. The Program Director shall immediately determine that a Foundation member has received a copy of each such proposed abstract and article. The Program Director shall also promptly provide to a the Foundation member a final copy of each abstract and article as submitted for publication.

9.2 The Foundation shall promptly review such proposed abstracts and articles to determine if potentially patentable Technical Developments are disclosed and shall promptly thereafter inform the N.I.H. whether delay of submission for publication or other public disclosure for a reasonable time will be required to establish Patent rights of reasonable scope. Disputes concerning such delays shall be referred to the Advisory Committee.

9.3 As to verbal presentations and discussions, the parties recognize that it is impractical to provide a complete review system for Patent purposes and that considerable discretion must be left in the investigator. It is the intent of the N.I.H. and the Foundation to provide the investigators guidance sufficient to avoid any divulgations that would compromise the establishment of the best possible Patent position.

9.4 The reporting and evaluation as provided for in Paragraphs 9.1 and 9.2 notwithstanding, the Foundation representatives on the Advisory Committee are exposed to all Program and Project plans before commencement and such representatives have full opportunity and right to follow the progress of any and all Projects. Through this mechanism the assigned the Foundation Project Scientists and the Foundation shall determine as early as practicable the potential for establishing Patent rights and its interest in obtaining a license of such rights. As soon as such potential is determined by the Foundation the parties shall cooperate on immediate actions necessary to the establishment of such rights, including, if necessary delay of publication for a reasonably brief period of time to conduct any further research or take other actions that may be necessary to file appropriate and adequate Patent applications.

9.5 All scientific publications reporting research results from Program activities shall acknowledge that support for such research was provided by the Foundation.

9.6 Upon written request to the Advisory Committee, the Foundation shall receive adequate samples of all available scientific materials isolated or developed in the Program, and shall have the right to use the same for research and/or commercial purposes, but subject to the provisions herein with respect to confidentiality, Patents and licenses. The Foundation's rights to receive and use samples as provided in this Paragraph 9.6 shall not be denied but shall be subject to reasonable modification for good reason as deemed necessary by the Advisory Committee.

ARTICLE X - CONFIDENTIALITY

10.1 Technical Developments and Patents shall be the sole and exclusive property of the N.I.H. subject to the license rights provided under Article XI.

10.2 The Foundation shall take reasonable precautions to safeguard, in a manner comparable to that used to protect its own confidential technical information, unpublished Technical Developments and not disclose the same to others for a period of two (2) years after receipt; provided, however, that the Foundation shall not be liable for unauthorized disclosure of Technical Developments in spite of such precautions. With respect to any particular identified Technical Development for which good cause can be shown, the N.I.H. may extend the two (2) year period for an additional period of two (2) years by notice in writing to the Foundation stating reasonable

justification therefor and that to the N.I.H.'s knowledge none of the exceptions of Paragraph 10.3 is applicable. After said initial two (2) year period or extension thereof the Foundation shall be under no restrictions as to revelation of any Technical Developments. Subject to the provisions herein with respect to Patents and licenses, the Foundation shall at all times be free to use Technical Developments.

10.3 The the Foundation obligation specified in Paragraph 10.2 shall not extend to Technical Developments which:

a) become a part of the public domain or of the public knowledge through no fault of the Foundation; or

b) were in the possession of the Foundation prior to disclosure by the N.I.H., and such possession by the Foundation is documented; or

c) are received by the Foundation lawfully and properly from a third party; or

d) have been revealed in patent applications.

10.4 Close cooperation between the Foundation personnel and N.I.H. personnel in the conduct of activities required by or contributing to the purposes of this Agreement may involve the disclosure of the Foundation confidential information to such N.I.H. personnel. Since, as a practical matter the N.I.H. is not able to make commitments of confidentiality on behalf of its faculty nor control the confidential information disclosed to them, it shall advise all Program and Project participants that they will be required to sign in advance of receiving the Foundation confidential information personal commitments of confidentiality as the Foundation deems necessary in the circumstances.

ARTICLE XI - PATENTS AND LICENSING

11.1 Whenever the N.I.H. reasonable feels a need therefor it may request the Foundation to provide in writing a preliminary indication of its current interest in commercializing Technical Developments resulting from a Project. However, the Foundation shall not be obligated to carry out commercialization.

11.2 The Foundation shall have the right and obligation to monitor progress of each Project through its representatives on the Advisory Committee and through access to N.I.H. Program participants and reports, or by such other arrangements as may be mutually acceptable to the Foundation, the Program Director, and the Project Investigators as appropriate. The primary purpose of such monitoring is to detect potentially patentable inventions as early as possible. The N.I.H. shall have the obligation to disclose promptly to the Foundation all potentially patentable or scientifically novel Technical Developments.

11.3 When in the judgment of the Foundation potentially patentable inventions are developed within a Project, the Foundation shall make a report of such to the N.I.H., with its views of further research that may be necessary to establish the nature and scope of these inventions, and to the extent then possible its opinion of the potential importance of such invention to commercialization prospects, and its interests concerning the licensing by the Foundation under any Patents that may be obtained covering such inventions. The information in said report shall be retained in confidence by the N.I.H. and used only for purposes of this Agreement.

11.4 When in the judgment of the N.I.H. potentially patentable inventions are developed which have not yet been identified by the Foundation through the processes described in Paragraphs 11.2 and 11.3 the N.I.H. shall make a report of such to the Foundation, including all available results and conclusions. Thereupon, the Foundation shall prepare and make its report to the N.I.H. as specified in Paragraph 11.3.

11.5 When the Foundation has indicated its interest in a license under prospective Patent rights to an invention it shall promptly cause its patent attorneys to file and prosecute in good faith a United States Patent application on such invention. The Foundation shall also effect the filing and good faith prosecution of foreign Patent applications corresponding to the United States application in whatever countries the Foundation by written notice to the N.I.H. indicates its interest in a license under prospective Patent rights.

11.6 Until such time as the Foundation notifies the N.I.H. in writing that it no longer has an interest in a license, or until the expiration of the time specified in Paragraph 11.14 during which time the Foundation has not given notice of its election to take a license, the Foundation agrees to bear the cost for filing and prosecution of Patent applications under Paragraph 11.5 and the issuance and maintenance of Patents thereon. The Foundation shall not be required to prosecute any such Patent application beyond the point of final rejection by the assigned Primary Examiner in the United States Patent and Trademark Office or the equivalent stage of prosecution if a foreign application. The N.I.H., at no cost or obligation or liability to the Foundation, may take action to file or prosecute any Patent application or have issued or maintain any Patent on which the Foundation elects not to take such action. Any such election by the Foundation shall be promptly communicated to the N.I.H. and in adequate time to allow the N.I.H. to take such action if it so desires. The Foundation's right to a license thereunder shall not thereby be diminished.

11.7 With respect to Patent applications filed and prosecuted and Patents issued or maintained by the Foundation under Paragraphs 11.5 and 11.6, the N.I.H. at its own expense may designate and retain patent counsel of its own who shall be permitted to review such Patent applications and proposed responses to Patent Office actions thereon and issuance and maintenance of Patents and to consult with the Foundation's patent attorneys before the Foundation takes action

thereon. However, the control of such filings, prosecutions, issuances and maintenances shall rest with the Foundation unless it elects to relinquish such control to the N.I.H. under Paragraph 11.6 by timely written notice. The N.I.H. may at any time elect by notice in writing to the Foundation to assume at N.I.H.'s cost those activities undertaken by the Foundation under Paragraphs 11.5, 11.6, and 11.7 on behalf of the N.I.H. in regard to any Patent application or Patent, and the Foundation's right to a license thereunder shall not thereby be diminished.

11.8 Title to all Patent applications and Patents issuing thereon covering Technical Developments made only by N.I.H. or non-the Foundation personnel or jointly with the Foundation personnel shall be in the N.I.H.. Any royalties payable with respect to the latter shall take into consideration the relative contributions of the N.I.H. and the Foundation coinventors.

11.9 The parties, including the inventors, Project Investigators and Program Director, shall do all acts necessary or desirable to provide the Foundation patent attorney with all information and records and execution of all documents necessary or desirable in the evaluation of Technical Developments, and in the filing and prosecution of Patent applications thereon, and in obtaining the issuance and maintenance of any Patents issuing from such Patent applications.

11.10 The N.I.H. shall take all necessary and desirable actions, including the signing of Agreements of Program Participants (Exhibit A) by each of the persons participating in the Program, including the Program Director, all Project Investigators, and all other persons involved in the research, to assure that it acquires sufficient title to all Technical Developments, Patent applications and patents from those of its personnel making such so as to be entitled to grant licenses to the Foundation as specified in this Agreement. The Program Director shall maintain a file of such signed Agreements of Program Participants which shall at all times be available to the Foundation representatives and upon request the Program Director shall provide the Foundation copies of specified Agreements.

11.11 In consideration of the Foundation's financial and other support of the Program and of the Patent work and cost thereof to be undertaken by the Foundation under this Article XI, the N.I.H. agrees that it will make no claims against and hereby waives any claim it may have against the Foundation or its employees for injury, loss or damage resulting from acts of omission or commission by the Foundation, its employees or agents, in connection with the preparation, filing and prosecution of Patent applications and the obtaining and maintaining of Patens covering Technical Developments.

11.2 Each inventor of a potentially patentable Technical Development, no later than the time of signing a Patent application thereon, shall be requested to agree, for the considerations recited in Paragraph 11.11, to make no claims against and to waive any claims he or she may have against the Foundation or its employees for injury,

loss or damage resulting from acts of omission or commission by the Foundation, its employees or agents, in connection with the preparation, filing and prosecution of Patent applications and the obtaining and maintaining of Patens covering Technical Developments. Should any inventor decline to so agree, any Patent application on such TEchnical Development shall be filed and prosecuted and Patents obtained and maintained by the N.I.H., at its own cost, and the Foundation's right to a license thereunder shall not thereby be diminished.

11.13 Notwithstanding any other provision of this Agreement, the N.I.H. agrees to hold harmless, indemnify and defend the Foundation and its employees from all liabilities, damages, costs, expenses (including attorneys fees) and losses resulting from any claim or any lawsuit or any settlement thereof made by the N.I.H. or by the Foundation with the N.I.H.'s consent, by the N.I.H.'s employees or third party having an interest through the N.I.H. or its employees, and arising out of acts of omission or commission in regard to the obligations undertaken by the Foundation or its employees under Paragraphs 11.5, 11.6, 11.7.

11.14 The N.I.H. hereby agrees to grant to the Foundation licenses to make, have made, use and sell under Patents, including the right to grant sublicenses, in such countries as the Foundation may elect. Such election for any Patent shall be made within two (2) years after the filing of a Patent application in the affected country, provided, however, that the Foundation shall not be required to negotiate the terms of a license agreement until after the relevant Patent has issued.

11.15 License grants to the Foundation of rights to Patent applications and Patents issuing thereon for inventions made solely with the Foundation support shall be exclusive for the life of such Patents. For any invention made with the joint support of the Foundation and funds provided by another sponsor, or in which there is a third party inventor, such license shall, whenever legally possible, be exclusive for the life of the Patents. However, if the N.I.H. is unable to grant a license which shall be exclusive for the life of the Patent, then the N.I.H. shall provide the Foundation with the maximum rights permitted by law. In connection with the transfer of Patent rights to be negotiated under this Agreement the parties shall consider the benefits relative to licensing as distinguished from transfer of title.

11.16 The N.I.H. agrees to grant and hereby grants to the Foundation an irrevocable, world-wide, paid-up, non-exclusive license, to make, have made, use and sell, including the right to grant sublicenses, on all Technical Developments licensed under this Paragraph 11.16, and from use, sale or other disposition of products made by use of the said Technical Developments, by the Foundation, its affiliates, sublicensees or any party acting on behalf of same. This provision shall survive termination of this Agreement.

11.17 The N.I.H. agrees to grant to the Foundation licenses on patents secured outside the Program to the extent the N.I.H. has the right to so license and to the extent necessary for the Foundation to practice Technical Developments. For such patents the grant shall be on terms and conditions reasonable in the circumstances and shall include the right to grant sublicenses. the Foundation agrees to indemnify the N.I.H. for liability arising from use of such patents licensed under this Paragraph 11.17 and from use, sale or other disposition of products mad by use of such patents, by the Foundation, its affiliates, sublicensees or any party acting on behalf of same. This provision shall survive termination of this Agreement.

11.18 License grants to the Foundation under Paragraphs 11.14 and 11.15 shall contain at least the following terms and conditions:

a) requirement that the Foundation by its own efforts or through sublicenses during the period of exclusivity make reasonable efforts to effect the lawful introduction of Licensed Products into the marketplace as early as practicable, consistent with the Foundation's sound and reasonable business practice and judgment. The requirement for introduction of a Licensed Product into the marketplace shall be deemed met if, in the exercise of the Foundation's sound and reasonable business practice and judgment, an alternative product serving essentially the same function has been introduced into the marketplace by the Foundation and with essentially the same benefits to the consuming public.

b) the right of the N.I.H. to require the Foundation to grant a non-exclusive sublicense to a responsible party on fair and reasonable terms and conditions in the event the requirement of subparagraph a) above is not met.

c) requirement that during the period of exclusivity the Foundation submit a product development plan specifying its reasonable estimate of the schedule of key events to market entry and provide periodic reports of significant modifications to the plan and progress against the plan to the N.I.H. until market entry is achieved, and requirement that the N.I.H. retain in confidence the information in said plan and reports and use only for purposes of the license.

d) right of the Foundation to sublicense others provided the N.I.H. is notified to whom the sublicense was granted.

e) a royalty schedule based on net selling price of Licensed Product sold by the Foundation or its sublicensees. The N.I.H. and the Foundation recognize that patent protection in only one factor contributing to commercial success of a product or process and that other factors, for example other patented inventions, unpatented know-how, technical and marketing skills, financial contribution and risk, nature and extent of market, nature and extent of competition,

normal trade practices, and condition of the economy also plan an important part. Accordingly, rather than attempt at this time to establish royalty rates, the N.I.H. and the Foundation declare their intentions to negotiate in good faith at the time of licensing, reasonable and fair royalties payable to the N.I.H. by the Foundation on the commercial practice by the Foundation and its sublicensees of each Technical Development covered by a Patent licensed under this Article XI, taking into account the various factors contributing to the commercialization. If the N.I.H. and the Foundation are unable to agree on royalty rates within six (6) months of the commencement of negotiation, the matter may be submitted to arbitration by either party and if so submitted by either party, shall be finally settled by arbitration conducted in accordance with the then-existing rules of conciliation and arbitration of the American Arbitration Association. Any such arbitration shall take place in St. Louis County, Missouri, before three (3) arbitrators, one of who shall be designated by the Foundation, one by the N.I.H. and the third by the two so designated. If one party fails to designate an arbitrator within thirty (30) days after the designation of an arbitrator by the other party, the arbitrator who should have been chosen by the other party shall be appointed by the American Arbitration Association as soon as possible. In the event that the said two arbitrators designated by the parties are unable to agree upon a third arbitrator within thirty (30) days after the nomination of the last of the said two arbitrators, the third arbitrator shall be appointed by the American Arbitration Association as soon as possible. None of the arbitrators need be designated from any panel published by the American Arbitration Association or any other arbitration association. The arbitrators shall apply the laws of the State of Missouri. The decision by the arbitrators shall be binding and conclusive upon the parties, their successors and assigns and they shall comply with such decision in good faith. The N.I.H. and the Foundation each shall pay its own costs and one-half of the costs of the arbitration.

f) provision that when a Licensed Product is sold but not as such and constitutes significantly less than all of the sold, an equitable adjustment shall be made in the net selling price of the thing sold to arrive at the net selling price for royalty calculations. When a Licensed Product is manufactured by or used in a process and the process is only a minor factor in the manufacture or use, an equitable adjustment shall be made in the net selling price.

g) provision that the Foundation payments required to be made to a third party for the right under a third-party

dominating patent to make, use or sell a Licensed Product licensed hereunder shall be credited against one-half of the royalties due the N.I.H. hereunder from sales of the same Licensed Product.

h) right of annual audit to confirm royalties on behalf of the N.I.H. by a firm of accountants to which the Foundation has no reasonable objection.

i) indemnification of the N.I.H. by the Foundation for liability arising from the manufacture, use, sale or other disposition of Licensed Products, by the Foundation or its affiliates, sublicensees or any party acting on behalf of same. This provision is to survive termination of the license agreement.

j) law of Maryland shall apply.

k) Such other provisions as the parties may mutually desire, and, in the case of an exclusive license of an invention jointly supported by the government, such provisions as the government may have validly required the N.I.H. to include.

l) Patent Infringement procedures:

(1) If at any time a third party shall infringe a Patent licensed to the Foundation hereunder, then the Foundation may either (i) obtain a discontinuance of such infringing operations; (ii) bring suit at the Foundation's expense against such infringer in the name of the Foundation, or in the name of the N.I.H. and the Foundation if the N.I.H. is a legally indispensable party; or (iii) permit the N.I.H. at its option to bring such suit at its own expense. The party who brings suit shall control the prosecution and any settlements thereof, and the other party shall be entitled to be represented therein by counsel of its own selection at tis own expense.

(2) From any recovery from such suit or settlement thereof there shall first be paid the expenses of the party bringing the suit, then the expenses of the other party hereto if represented by counsel, and the balance shall be divided two-thirds to the party bringing the suit and one-third to the other party, unless the parties agree otherwise.

(3) Before bringing suit the Foundation shall fully inform the N.I.H., and give careful consideration to the views of the N.I.H. in making its decision whether or not to sue.

(4) If the Foundation decides to sue and N.I.H. is a legally indispensable party, the N.I.H. shall have the

right to assign to the Foundation all of the N.I.H.'s rights, title and interest in the Patent of Patents concerned, in which event suit by the Foundation on such Patent or Patents shall thereafter be brought or continued solely in its name if the N.I.H. is no longer an indispensable party. Patents so assigned by the N.I.H. to the Foundation shall remain subject to the same royalty and all other terms and conditions of this Agreement.

11.19 Commencing with the fourth and subsequent years in which royalties are due to the N.I.H. pursuant to licenses contemplated under this agreement, the Foundation shall be entitled to a credit, not to exceed 25% of the gross royalties due for the commercialization of Licenses Products in each year, (a) of the Foundation's cumulative our-of-pocket costs (excluding the costs of the Foundation's employees) for patent activities under Paragraphs 11.5 and 11.6 and (b) 50% of all payments made prior to the date of crediting by the Foundation to the N.I.H. under Article VIII hereof, which payments can be related to the cost of development of those commercialized Licensed Products.

11.20 Should the Foundation not indicate interest to take a particular license from the N.I.H., or subsequently decide not to enter into the license agreement, or terminate the license agreement, or should such agreement be justifiably terminated by the N.I.H. without challenge or objection by the Foundation, then the N.I.H. shall be free to license to others the subject matter so released, without further obligation to the Foundation. However, such licenses to others shall exclude Licensed Products directly competitive with or substantially equivalent to those the Foundation has licensed.

11.21 Upon the indication by the Foundation of in interest in any Technical Developments and that the Foundation desires to commence activities directed at transferring such technology to its laboratories, then the Program Director shall participate with the Foundation representatives, the Project Investigators and others as may be appropriate to work out mutually acceptable actions to be taken to effect such technology transfer, including activities contemplated under Paragraphs 6.2 and 9.6, all at no added cost to the Foundation.

ARTICLE XII - TERMINATION

12.1 This Agreement shall terminate on _____ unless extended by mutual agreement of the parties under the provisions of Paragraph 3.2; or unless earlier terminated under the provisions of Paragraphs 4.3, 12.2, or 12.3.

12.2 In the event that either party to this Agreement defaults or breaches any of the provisions hereof, the other party reserves the right to terminate this Agreement upon ninety (90) days written notice

to the defaulting party; provided that if the defaulting party, within said ninety (90) day period cures the said default or breach, this Agreement shall continue in full force and effect.

12.3 If either party shall become insolvent, or shall make any assignment for the benefit of creditors, or shall be adjudged bankrupt, or if a receiver or trustee of the property of either party is appointed, the other party on thirty (30) days written notice may terminate this Agreement.

12.4 Notwithstanding the termination of this Agreement for any reason, the provisions of Articles X, XI, and XIII shall remain in effect subject to Paragraph 12.5.

12.5 If the N.I.H. exercises its rights under Paragraphs 12.2 or 12.3 and validly effects the termination of this Agreement it shall be under no further obligation to grant further licenses to the Foundation and the Foundation shall promptly transfer to the N.I.H. the prosecution of allpending Patent applications and the maintenance of all Patents not yet licensed to the Foundation and which the Foundation is prosecuting or maintaining hereunder.

ARTICLE XIII - INDEMNIFICATION

13.1 the Foundation agrees to hold harmless, indemnify and defend the N.I.H. from all liabilities, demands, damages, expenses and losses arising out of use by the Foundation or by any third party acting on behalf of or under authorization from the Foundation, of information or materials received from N.I.H. or out of any use, sale or other disposition by the Foundation or by any third party acting on behalf of or under authorization from the Foundation of products made by use of information or materials received from N.I.H..

13.2 The N.I.H. warrants that it carries sufficient Worker's Compensation insurance to comply with the laws of Maryland and any other state where any of the work pursuant to this Agreement is performed with respect to the N.I.H.'s personnel. Except as provided under Paragraph 13.3 it is expressly understood and agreed that the Foundation shall no be responsible for or obligated in any manner to reimburse the N.I.H. or to pay any compensatory, special, exemplary or consequential or other direct or indirect damages in respect of any loss, property damage, personal injuries or loss of life incurred in performance of the research work under this Agreement other than that attributable in whole or in part to the Foundation's fault or negligence, and the N.I.H. shall defend, indemnify and hold the Foundation harmless (using funds other than those paid to N.I.H. pursuant to the provisions of Article VIII hereof) from any and all claims, costs or liability for any such loss, damage, injuries or loss of life, other than that attributable in whole or in part to the Foundation's fault or negligence.

13.3 The Foundation agrees to defend, indemnify and hold the N.I.H. harmless from any and all claims, costs or liability for any loss, damage, injury or loss of life, other than that attributable in

whole or in part to the N.I.H.'s fault or negligence, arising as a result of any the Foundation Employee working in the laboratories of the N.I.H. as provided under Paragraph 6.2.

ARTICLE XIV - TRANSFER OF INTEREST

14.1 Neither this Agreement, nor any of the rights and obligations stated herein or resulting therefrom, may be assigned, transferred or otherwise disposed of by either party without the prior written consent of the other unless such assignment, transfer or disposition is to a successor to all the business of the transferor which pertain to the subject matter of this Agreement, and provided that such successor shall agree in writing with the other party to assume all the obligations of the transferor to the other party.

14.2 Should it become necessary or desirable for the N.I.H. to subcontract any of the Program research to others, such research shall be performed under a formal subcontract satisfactory to the Foundation by which the subcontractor accepts all appropriate provisions of this Agreement and other such provisions as are necessary.

ARTICLE XV - NOTICE

15.1 Any notice or report required or permitted to be given under provisions of this Agreement shall be in writing and be sent by first class mail or hand delivered:

a) If to the Foundation, to:

with a copy to:

b) If to the N.I.H., to:

with a copy to:

15.2 Either party may change the address or the person(s) designated to receive notice by notifying the other in writing of the change.

ARTICLE XVI - GENERAL PROVISIONS

16.1 Except as provided in Paragraph 9.5, neither party shall use the name of the other party, its affiliated organizations or its personnel in advertising promotional materials or news or press releases pertaining to the subject matter of this Agreement without prior written consent of such other party.

16.2 This Agreement shall be construed under the laws of the State of Maryland.

16.3 No waiver of any default, condition, provisions or breach of this Agreement shall be deemed to imply or constitute a waiver of any other like default, condition, provision or breach of this Agreement.

16.4 The Article headings used in this Agreement are for convenience only and form no part of the Agreement.

16.5 This writing constitutes the entire Agreement between the parties hereto relating to the subject matter of this Agreement and there are no understandings, representations or warranties of any kind except as expressly provided herein. Neither this Agreement, nor any term or provision thereof, may be discharged, waived, released, abandoned, changed or modified except by an instrument in writing signed by a duly authorized representative of each of the parties to this Agreement. If either party desires a modification or change of any kind in this Agreement, the parties shall, upon reasonable notice of the proposed modification or change by the party desiring the change, confer in good faith to determine the desirablitiy of such modification or change.

16.6 The parties agree that it is the intention of neither party to violate any valid federal, state and local laws and regulations; that is any sentence, paragraph, clause, or combination of the same in this Agreement is in violation of any applicable law or regulation, or is unenforceable or void for any reason whatsoever, such sentence, paragraph, clause or combinations of the same shall be inoperative and the remainder of the Agreement shall remain binding upon the parties.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed in duplicate by their duly qualified officers.

THIS AGREEMENT CONTAINS A BINDING ARBITRATION PROVISION WHICH MAY BE ENFORCED BY THE PARTIES

By_____

Date_____

By_____

Date_____

EXHIBIT A

AGREEMENT OF PROGRAM PARTICIPANTS

The purpose of the following agreement is to describe the responsibilities of and to enlist the support and cooperation of research participants and to insure compliance with relevant N.I.H. policies.

Therefore, as a participant in a research project under the Biomedical Research Program sponsored and funded by the Foundation Company, I agree to abide by the following terms and conditions:

1. PATENTABLE INVENTIONS:

(a) Participants will promptly disclose to the N.I.H.'s Program Director any potentially patentable invention or novel scientific development they produce in any research Project funded by the Foundation. Such disclosure will occur prior to disclosure to any other non-Program participant.

(b) Participants will, upon request, assign rights to patentable inventions to the N.I.H. so that it may grant required licenses to the sponsor.

(c) Participant inventors will cooperate with the Foundation and N.I.H. patent attorneys in the filing and prosecution of patent applications. Due to the major expense and specialized professional assistance required to pursue patent rights in a research program of this magnitude, the Foundation has assumed this responsibility. The N.I.H. will monitor these efforts and at its option may assume such responsibility on a case by case basis.

(d) In consideration of the Foundation's willingness to file and prosecute patent applications at its own expense, participant inventors will be requested to waive any claim of liability by the Foundation in these efforts. Otherwise, the N.I.H. must assume this responsibility and its expense.

(e) Any royalties from licensed inventions received by the N.I.H. will be distributed as follows: 40% to the research laboratory(ies) in which the invention was made, 40% to the cognizant department(s), and 20% to the School of Medicine.

2. PRODUCTS OF RESEARCH:

(a) New materials, processes, devices, scientific information, and any other research products isolated or developed in a project, whether patentable or not, will be made available to the Foundation for its evaluation and general use.

(b) Such research products may be made available to other research scientists at non-profit institutions according to

normal academic practice. However, recipient scientists should agree not to further distribute such research products and not to use them for the benefit of another commercial firm. Distribution of potentially patentable research products should not be made until the Foundation has evaluated patentability and, if appropriate, filed a patent application.

3. PUBLICATIONS:

(a) Scientific advances made under this research program will be freely reported in the scientific literature.

(b) Two (2) copies of each proposed publication, including abstracts, in the best form then available will be provided to the Program Director at least one (1) month before being submitted for publication.

(c) Based on a review by the Foundation patent attorneys of the proposed article, a brief delay in its submission for publication may be necessary to allow the filing of adequate patent applications. Such brief delay may occasionally be necessary to avoid the loss of patent rights.

(d) Two (2) copies of the final abstract and article as submitted to the publisher shall be simultaneously provided to the Program Director.

(e) Each publication will acknowledge the Foundation Company support of the research being reported.

(f) Prior to the evaluation of research results for potentially patentable inventions, participants will use caution in public or other outside presentations and discussions not to prematurely disclose critical technical information which could result in the loss of patent rights.

4. COOPERATION WITH THE FOUNDATION:

(a) It is intended that there be mutually productive and continual interchange between the N.I.H. and the Foundation scientists. For this purpose a the Foundation Project Scientist will be appointed as the primary company contact with each Project Investigator. Each Project Investigator will be available for consultation with the the Foundation Project Scientist on matters concerning the project.

ARTICLE XII - TERMINATION

12.1 This Agreement shall terminate on June 30, 1987 unless extended by mutual agreement of the parties under the provisions of Paragraph 3.2; or unless earlier terminated under the provisions of Paragraphs 4.3, 12.2, or 12.3.

12.2 In the event that either party to this Agreement defaults or breaches any of the provisions hereof, the other party reserves the right to terminate this Agreement upon ninety (90) days written notice to the defaulting party; provided that if the defaulting party, within said ninety (90) day period cures the said default or breach, this Agreement shall continue in full force and effect.

12.3 If either party shall become insolvent, or shall make any assignment for the benefit of creditors, or shall be adjudged bankrupt, or if a receiver or trustee of the property of either party is appointed, the other party on thirty (30) days written notice may terminate this Agreement.

12.4 Notwithstanding the termination of this Agreement for any reason, the provisions of Articles X, XI, and XIII shall remain in effect subject to Paragraph 12.5.

12.5 If the University exercises its rights under Paragraphs 12.2 or 12.3 and validly effects the termination of this Agreement it shall be under no further obligation to grant further licenses to Monsanto and Monsanto shall promptly transfer to the University the prosecution of allpending Patent applications and the maintenance of all Patents not yet licensed to Monsanto and which Monsanto is prosecuting or maintaining hereunder.

ARTICLE XIII - INDEMNIFICATION

13.1 Monsanto agrees to hold harmless, indemnify and defend the University from all liabilities, demands, damages, expenses and losses arising out of use by Monsanto or by any third party acting on behalf of or under authorization from Monsanto, of information or materials received from University or out of any use, sale or other disposition by Monsanto or by any third party acting on behalf of or under authorization from Monsanto of products made by use of information or materials received from University.

13.2 The University warrants that it carries sufficient Worker's Compensation insurance to comply with the laws of Missouri and any other state where any of the work pursuant to this Agreement is performed with respect to the University's personnel. Except as provided under Paragraph 13.3 it is expressly understood and agreed that Monsanto shall no be responsible for or obligated in any manner to reimburse the University or to pay any compensatory, special, exemplary or consequential or other direct or indirect damages in respect of any loss, property damage, personal injuries or loss of life incurred in performance of the research work under this Agreement other than that attributable in whole or in part to Monsanto's fault

MONSANTO-WASHINGTON UNIVERSITY
BIOMEDICAL RESEARCH AGREEMENT

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Exhibit A - Agreement of Program Participants

AGREEMENT

This Agreement, effective as of July 1, 1982, is by and between the parties:

WASHINGTON UNIVERSITY, a corporation organized under the laws of Missouri and having its principal offices at Lindell and Skinker Boulevards, St. Louis, Missouri 63130 (hereinafter "University")

AND

MONSANTO COMPANY, a corporation organized under the laws of Delaware and having its principal offices at 800 North Lindbergh Boulevard, St. Louis, Missouri 63167 (hereinafter "Monsanto");

WITNESSETH THAT;

WHEREAS, the University has sought and continues to seek the advancement of knowledge through education and research;

WHEREAS, the University desires that the useful results of its research be made available to society through established avenues of trade and commerce;

WHEREAS, Monsanto has personnel and facilities for the conduct of research, for the development of new products and processes based on scientific research, and for efficient large scale manufacture and distribution;

WHEREAS, Monsanto seeks to utilize the fruits of scientific research as a source for the development, manufacture and distribution of new products, especially products for meeting human needs;

WHEREAS, the University and Monsanto recognize that each can benefit from a relationship in biomedical research extending over a span of years that will provide present and potential financial support for the University, potential benefit to health care consumers and potential commercial benefit for Monsanto, while enhancing the understanding and work of their respective scientists by close interaction among them;

WHEREAS, the University and Monsanto believe that industrial support of biomedical research can lead to enhancement of their respective capabilities and render important long range benefits to the University, to Monsanto and to society;

WHEREAS, the University and Monsanto believe that biomedical inventions are likely to be brought into public use for public benefit through the incentive of the protection of the Patent System utilized by the parties to make available through Monsanto, new commercial products and processes, while concurrently providing royalty income to the University to support its educational and charitable activities;

WHEREAS, the University and Monsanto recognize that the concept of academic freedom must be preserved by the Agreement and shall be a guiding principle in its administration;

WHEREAS, the University and Monsanto recognize that the 1964 Statement on Preventing Conflicts of Interest in Government Sponsored Research at Universities, issued by the American Association of University Professors and the American Council on Education expresses principles applicable to corporate and university relationships;

WHEREAS, the University and Monsanto are prepared to undertake a collaborative effort in the field of biomedicine with a focus on proteins and peptides which modulate cellular function, where the University currently has substantial personnel and facilities for the conduct of research and a field where Monsanto has in-house research underway and wherein Monsanto expects to increase its in-house research emphasis; and

WHEREAS, Monsanto proposes to provide significant financial support to the University in furtherance of this collaborative effort according to the terms set forth in this Agreement.

NOW, THEREFORE, the parties hereto agree as follows:

ARTICLE I
PURPOSE AND SCOPE OF THIS AGREEMENT

The purpose of the present Agreement is to provide a contractual framework to govern conduct of this collaborative effort under which multiple research Projects (as hereinafter defined) can be undertaken. This Agreement is designed to recite the contractual provisions which would apply to all Projects authorized by the Advisory Committee under the Program (as hereinafter defined).

ARTICLE II - DEFINITIONS

2.1 "Program" means all research activities performed by or for the University under this Agreement which are authorized and funded by the Advisory Committee (as hereinafter defined) and Program Director from financial support provided by Monsanto.

2.2 "Project" means a specific research activity which has been authorized and funded by the Advisory Committee from financial support provided by Monsanto under the Program. Projects shall be of three types:

a) "Exploratory Projects": Those directed to fundamental research on basic scientific questions with a focus on proteins and peptides which modulate cellular function.

b) "Specialty Projects": Those directed to applied research with a focus on proteins and peptides which modulate cellular function and in which Monsanto sees more immediate commercial utility either in terms of technologies or products or both.

c) "Construction and Renovation Projects": Those construction and renovation activities directed to physical facilities required to accommodate and enhance the Program.

2.3 "Advisory Committee" means those representatives of the University and Monsanto charged with administering the Program. The Advisory Committee comprises a Program Director who shall be Chairman and appointed by the University, three (3) additional members appointed by the University, and four (4) members appointed by Monsanto. All members including the Program Director, shall have voting power.

2.4 "Project Investigator" means the scientist in charge of a Project and responsible for its conduct in accordance with the terms of the Project award and the accepted operating policies and procedures of the University. A Project Investigator shall be a faculty member qualified to be a principal investigator on research projects sponsored by government and nationally reputable agencies.

2.5 "Technical Developments" means any and all inventions, discoveries, advances, know-how, processes, devices, machines, materials, software and other information arising from the Program, whether or not the same are patentable, copyrightable or otherwise protectable by law.

2.6 "Patent" means any patent, certificate of invention, inventors certificate, utility model or similar form of protection, or plant patent or other form of protection of plant material, granted anywhere in the world covering an invention which is a Technical Development, and owned by the University or in which the University has licensing rights.

2.7 "Licensed Product" means any product covered by a claim or made by or used in a process covered by a claim of an unexpired Patent at the time and in the country wherein the product is manufactured, used or sold, which claim has not been adjudicated invalid in a final adjudication from which there can no longer be an appeal, and which Patent is licensed to Monsanto as provided for in this Agreement.

2.8 "Agreement of Program Participants" means the specimen agreement set forth in Exhibit A attached hereto.

ARTICLE III - TERM OF AGREEMENT

3.1 This Agreement shall be for a period of five (5) years commencing July 1, 1982 and terminating June 30, 1987, unless earlier terminated under the provisions of Paragraphs 4.3, 12.2 or 12.3.

3.2 On or about February 1, 1985, the parties shall enter into discussions as to whether both parties desire to continue the Program beyond the normal termination date of June 30, 1987. If continuation is mutually desirable the parties shall proceed with negotiations to arrive at mutually acceptable terms and conditions for such continuation. If continuations is not desired by either or both parties, this fact shall be confirmed in writing before the end of the third year of the initial term of this Agreement.

3.3 If, in accordance with Paragraph 3.2 the parties decide not to continue the Program beyond June 30, 1987, then Monsanto shall have the option of electing to continue its support, on a Project by Project basis, for any Projects started but not completed during the normal term. Monsanto shall make such elections and the parties shall negotiate in good faith mutually acceptable financial terms and time extensions, not to exceed two (2) years in duration, prior to the expiration of this Agreement. All other relevant terms of this Agreement shall apply to such terminal Project continuations.

ARTICLE IV - PROGRAM ADMINISTRATION

4.1 The Program shall be under the direction of the Advisory Committee chaired by the Program Director, Dr. David M. Kipnis, who shall be assisted by seven (7) other Committee members including three (3) members, namely, Dr. Luis Glaser, Dr. Paul Lacy, and Dr. Joseph Davie, appointed by the University and four (4) members, namely, Dr. Howard A. Schneiderman, Dr. G. Edward Paget, Dr. Louis Fernandez and Dr. David C. Tiemeier, appointed by Monsanto. The University and Monsanto representatives on the Advisory Committee, other than the Program Director, may be changed at appropriate intervals by either of the parties with timely notice to the other party.

4.2 All actions to approve, defer or disapprove Program activities and to fund new Projects, to provide supplemental or continuation support to previously approved Projects or activities, and to discontinue previously approved Projects or activities shall be taken in convened meeting of the Advisory Committee. Any such action shall require approval of a majority of the members of the Advisory Committee, i.e., at least five (5) of the eight (8) members.

4.3 Should the Program Director or any member of the Advisory Committee be unable to continue service, a replacement shall be promptly appointed by the appropriate party. Program Director replacements shall be mutually acceptable to Monsanto and the University; provided, however, that acceptance by Monsanto shall not be unreasonably withheld. If the University cannot nominate an acceptable replacement for the Program Director within one (1) month following the inability of the Program Director to continue service, Monsanto may suspend its financial support for the Program until an acceptable Program Director is appointed. If such suspension continues beyond six (6) months, Monsanto may summarily treat this Agreement as breached under provisions of Paragraph 12.2 and the ninety (90) day notice provision of Paragraph 12.2 is not applicable.

4.4 The Program Director shall convene a meeting of the Advisory Committee at least once each calendar quarter and otherwise as frequently as necessary to act on Program matters and pending proposals, to review the financial status and progress of active Projects, to deal with unanticipated problem areas, and to consider other matters concerned with the effectiveness of the Program. Except in an emergency, notice of a scheduled meeting and an agenda therefore shall be issued not less than two (2) weeks prior to any such meeting. Any Advisory Committee member may request convening of special meetings and may have any matter related to the conduct of the Program placed on the Advisory Committee agenda for the next or forthcoming meeting by making such a request in writing to the Program Director sufficiently in advance of the meeting to allow adequate preparation for a productive discussion of the matter.

4.5 The Program Director shall, after each meeting of the Advisory Committee, distribute to all Committee members, whether present at the meeting or not, a written summary of matters considered and actions taken.

4.6 Should a member of the Advisory Committee not be able to attend a given meeting, an alternate representative may be designated by so notifying the Program Director on a meeting by meeting basis. If the Program Director is unable to attend a meeting of the Advisory Committee, he may designate another University member of the Advisory Committee to chair the meeting and perform the functions of the Program Director at that meeting. However, it is understood by the parties that the effectiveness of the Advisory Committee will be promoted by continuity of membership and regular attendance at meetings by members.

ARTICLE V - PROJECT SELECTION AND IMPLEMENTATION

5.1 The Advisory Committee shall decide on both the Exploratory and Specialty Projects which are to be supported under the Program. The Advisory Committee shall strive to identify and fund Projects in which the University enjoys scientific leadership and in which Monsanto has a meaningful interest.

5.2 The Advisory committee has ultimate responsibility for identification and selection of all Projects as well as for overall and ongoing direction of the Program. As a general guide, the parties to this Agreement intend for the Program to embrace two (2) types of Projects, namely, Exploratory Projects and Specialty Projects. Ultimately during the term of this Agreement, it is expected that approximately thirty percent (30%) of the research effort would be directed toward fundamental questions (Exploratory Projects) while seventy percent (70%) would be directed toward specific products (Specialty Projects). The parties hereto recognize that facility renovation and construction is to be funded as a Program activity within the limitation of the financial support specified in Article VIII hereof.

5.3 Following the identification of a field of interest by the Advisory Committee the Program Director shall seek Project proposals from faculty members of the University.

5.4 Project proposals, continuations and supplements thereto shall be on forms provided by the Program Director. The Program Director shall provide copies of Project proposals to all members of the Advisory Committee at least one (1) month prior to the Committee meeting at which such requests are to be considered.

5.5 Whenever the Advisory Committee has identified a field of research of mutual interest, and has received an acceptable Project proposal, a Project may be created by the authorization of the Advisory Committee in writing. The Project authorization shall identify the Project Investigator, define the research activities to be pursued, the level of effort to be devoted to the Project by the Project Investigator, include a budget covering all costs of such research, define the time duration and such other terms and conditions as may be agreed to and be approved by the Project Investigator consistent with the purposes and conditions of this Agreement.

5.6 With concurrence of the Advisory Committee, and in furtherance of productive interaction between scientists of Monsanto and those of the University, Monsanto representatives on the Committee shall designate a Monsanto Project Scientist who shall act as the primary contact with each Project Investigator during the conduct of a given Project.

5.7 The Program Director shall submit to Monsanto in writing summary reports of all important findings and results as soon as available and detailed annual Program reports on each anniversary of this Agreement. The annual reports shall include summaries and conclusions for each active Project.

ARTICLE VI
INTERACTION BETWEEN MONSANTO AND THE UNIVERSITY

6.1 To optimize the mutual benefit and collaboration intended by this Program, the parties desire that there be mutually productive and continuing interchanges between University and Monsanto scientists. Accordingly, the University will ensure that all University scientists engaged in the Program are available to appropriate Monsanto scientists for consultation in the area of their respective Projects. Temporary office space at the University shall be made available to collaborating Monsanto scientists.

6.2 The University agrees to permit individual scientists and technicians from Monsanto, with the consent of the Program Director and Project Investigator and at Monsanto's expense, to spend appropriate periods of time in University laboratories where Project research is being conducted to learn techniques developed therein, to participate is mutually desirable, and to facilitate the transfer of Technical Developments to Monsanto. Monsanto agrees that its

employees who are permitted to train and function in the laboratories of the University pursuant to this paragraph shall be required to observe the applicable policies of the University.

6.3 It is anticipated that interaction between the Project Investigators and Monsanto Project Scientists will identify facilities and capabilities of Monsanto which may be used by University scientists to enhance the progress of Projects. Moreover, it is appropriate that evaluation of the commercial potential of research leads and products be addressed through the interaction of the Project Investigators and the Monsanto Project Scientists.

ARTICLE VII - SCIENTIFIC REVIEW PANEL

7.1 To assess the scientific merit and cost effectiveness of Projects supported by the Program, the parties hereto recognize the need for periodic review by an independent panel of scientists.

7.2 During the third year of the initial term of this Agreement and every two (2) years thereafter, the Advisory Committee shall commission a scientific review panel comprising at least four (4) distinguished scientists, not employees of Monsanto or members of the University staff, to review al then-current Project work and to appraise the direction of the Program, both qualitatively and quantitatively. Composition of the review panel should be designed to include scientists having clinical and pharmaceutical orientation as well as academic orientation.

7.3 The review panel shall be required to issue a confidential report to the Advisory committee and to the Chancellor of the University and the Chief Executive Officer of Monsanto stating its views, conclusions and recommendations regarding the scientific merit and cost effectiveness of the Program and Projects and the impact of the Program on the respective institutions involved.

7.4 Costs of the scientific review shall be paid from Program funds.

VIII - PROGRAM FINANCES

8.1 Monsanto hereby agrees to provide to the University for the total support of the Program during the five (5) year term of this Agreement, the total amount of Twenty-Three Million, Five Hundred Thousand Dollars ($23,500,000), to be adjusted according to Paragraph 8.2, which shall cover both direct and indirect expenses of the University. The University agrees that this funding shall be disbursed solely in support of the Program.

8.2 Payment by Monsanto to the University of the amount specified in Paragraph 8.1 shall be limited to contract year budget amount recited in the following schedule which are subject to (i) annual adjustment for inflation in accordance with this Paragraph 8.2, and

(ii) budget underruns carried forward from one year to the next with approval of the Advisory Committee in accordance with Paragraph 8.9. The parties hereto believe the following expenditure schedule reflects the appropriate allocation of funds:

Contract Year	Exploratory Projects	Specialty Projects	Construction and Renovation Projects	Contract Year Budget
82/83	$1,500,000	$ 1,500,000	$ (See Para.8.4)	$ 3,000,000
83/84	$1,600,000	$ 2,200,000	$	$ 3,800,000
84/85	$1,700,000	$ 3,000,000	$	$ 4,700,000
85/86	$1,800,000	$ 3,800,000	$	$ 5,600,000
86/87	$1,900,000	$ 4,500,000	$	$ 6,400,000
Total	$8,500,000	$15,000,000	$	$23,500,000

The initial contract year shall run from the effective date of this Agreement through June 30, 1983. Subsequent contract years shall run from July 1 through June 30.

The contract year budgets above recited, commencing with the second contract year (July 1, 1983 through June 30, 1984), shall be adjusted using the GNP Deflator Index in the following manner:

(a) A base index will consist of an average of the GNP Deflator Index figures for the four (4) quarters from April 1981 through March 1982.

(b) An index for each contract year, commencing with the second contract year, will consist of an average of the four (4) quarterly GNP Deflator Index figures covering the period April through the following March immediately preceding the start of each contract year. (For example the index for the second contract year will be the average of the GNP Deflator Index figures for the four (4) quarters covering April 1982 through March 1983.)

(c) Each contract year budget as stated above shall be adjusted prior to the commencement of the relevant contract year by applying a multiplier derived as follows:

$$\text{multiplier} = 1 + \frac{\text{contract yr. index - base index}}{\text{base index}}$$

For purposes of this Agreement the "GNP Deflator Index" shall mean the quarterly revised Implicit Price Deflator for the Gross National Product as reported by The United States Department of Commerce, Bureau of Economic Analysis. Since it is normal for a quarterly GNP Deflator Index to be revised shortly after it is first published, calculations herein shall be based on the final index for a

quarter, if available, and otherwise on the most recent revision available on June 1 immediately preceding the start of the contract year for which calculations are made.

8.3 It is recognized that the occurrence of expenditures during a contract year is primarily dependent on Project spending plans authorized by the Advisory committee during the current and any prior years. Nevertheless, Monsanto is not obligated to reimburse the University for expenditures incurred during, or carried forward into, any contract year in excess of the total amount of the contract year budget shown on the expenditure schedule in Paragraph 8.2, as it may have been adjusted under the provisions of Paragraph 8.2 and 8.9, unless the parties mutually agree to modify said total amount by formal amendment to this Agreement.

8.4 All Program funds shall be administered by the Program Director who shall allot funds, with the approval of the Advisory Committee as specified in Article IV, to Project participants. By unanimous consent the Advisory Committee may reallocate among Project types up to 10% of the total funds for any contract year specified in the schedule of Paragraph 8.2, as such annual total may have previously been modified by Monsanto under Paragraph 8.3 or by the Advisory Committee under Paragraph 8.9. Such reallocation of contract year funds may be among the Exploratory Project type, the Specialty Project type and the Construction and Renovation Project type. The Program Director shall monitor spending of funds budgeted for individual Projects and may make adjustments among expense categories of an approved Project budget upon justified requests of Project Investigators. The Program Director shall keep the Advisory Committee informed of financial matters which might indicate a significant departure from Project plans previously approved by the Committee. The Program Director's financial records on all segments of the Program and Projects shall be available for review by any member of the Advisory Committee.

8.5 Approved funds for individual Projects or for support of the Program shall be maintained by the University's Accounting Services Department in separate accounts for each such activity. Spending for each account shall be under the direct control of the Program Director or his delegated Project Investigator, respectively, who shall be furnished with the Accounting Services standard monthly statements of spending against their accounts.

8.6 The accounting records of Program activity shall be available for audit by Monsanto, using its own internal or outside auditors, during the normal business hours of the University.

8.7 The University shall submit monthly invoices with supporting details to Monsanto showing actual spending by University expense category for each Project for which reimbursement of expenditures is being requested. Each invoice shall also show cumulative expenditures to date for each such Project against the approved Project budget and cumulative total Program expenditures for the contract year against

the current contract year budget shown on the expenditure schedule in paragraph 8.2 as it may have been previously adjusted under the provisions of Paragraphs 8.2 and 8.9.

8.8 Monsanto agrees to pay the University promptly upon receipt and approval of the University's invoices provided under Paragraph 8.7 up to the level of the contract year budget set forth in Paragraph 8.2, as such contract year budget may have been adjusted under the provisions of Paragraphs 8.2 and 8.9.

8.9 If in any contract year there is an overrun of the contract year budget the excess expenditures shall be carried forward and be paid from the following contract year budget. If in any contract year there is an underrun of the contract year budget (hereinafter in this paragraph "the current contract year budget"), then with the unanimous consent of the ADvisory Committee the underrun amount may be carried over as an addition to the following contract year budget. The approved amount from the current contract year budget which is to be carried over shall be adjusted by a multiplier calculated by dividing the multiplier from Paragraph 8.2 for the following contract year budget by the multiplier for the current contract year budget. The thus adjusted amount to be carried over shall then be added to the following contract year budget after the following contract year budget has been adjusted in the usual manner.

8.10 Title to all item of equipment purchased with Program funds shall vest in the University at the time of purchase.

8.11 Upon termination of this Agreement for any reason the University shall provide a final accounting of Program funds to Monsanto within ninety (90) days following such termination. During said ninety (90) days the University shall liquidate all outstanding obligations incurred prior to termination but shall not incur additional obligations. The balance of funds remaining shall thereupon be returned to Monsanto unless required for completion of Projects in accordance with Paragraph 3.3.

8.12 Indirect costs invoiced under Paragraph 8.7 shall, through June 30, 1987, be at a fixed rate of fifty percent (50%) of invoiced direct costs. Indirect costs invoiced by the University for any activity performed in whole or in part by any contractor shall not exceed the indirect costs which would have been invoiced had such activity been performed wholly by the University. If the University's indirect costs rise by ten percent (10%), i.e., to fifty five percent (55%) or more, then upon the University's request Monsanto agrees that it will negotiate the University's request to increase the rate of indirect costs from fifty percent (50%) under this Agreement, taking into consideration relevant factors, including relative increases in indirect costs made in other research agreements, including government agreements.

ARTICLE IX - PUBLICATIONS AND REVIEW OF TECHNICAL DEVELOPMENTS

9.1 The University faculty members participating in Projects are a liberty to publish the results of their research subject to the provisions of Paragraphs 9.1, 9.2, 9.3, 9.4 and 9.5. Project awards will require that participants provide copies of all abstracts and articles, in the best form then available, proposed to be submitted for publication in sufficient time to permit the Program Director to provide same to a Monsanto member of the Advisory Committee at least one (1) month prior to submission to a publisher or other third party. The Program Director shall immediately determine that a Monsanto member has received a copy of each such proposed abstract and article. The Program Director shall also promptly provide to a Monsanto member a final copy of each abstract and article as submitted for publication.

9.2 Monsanto shall promptly review such proposed abstracts and articles to determine if potentially patentable Technical Developments are disclosed and shall promptly thereafter inform the University whether delay of submission for publication or other public disclosure for a reasonable time will be required to establish Patent rights of reasonable scope. Disputes concerning such delays shall be referred to the Advisory Committee.

9.3 As to verbal presentations and discussions, the parties recognize that it is impractical to provide a complete review system for Patent purposes and that considerable discretion must be left in the investigator. It is the intent of the University and Monsanto to provide the investigators guidance sufficient to avoid any divulgations that would compromise the establishment of the best possible Patent position.

9.4 The reporting and evaluation as provided for in Paragraphs 9.1 and 9.2 notwithstanding, the Monsanto representatives on the Advisory Committee are exposed to all Program and Project plans before commencement and such representatives have full opportunity and right to follow the progress of any and all Projects. Through this mechanism the assigned Monsanto Project Scientists and Monsanto shall determine as early as practicable the potential for establishing Patent rights and its interest in obtaining a license of such rights. As soon as such potential is determined by Monsanto the parties shall cooperate on immediate actions necessary to the establishment of such rights, including, if necessary delay of publication for a reasonably brief period of time to conduct any further research or take other actions that may be necessary to file appropriate and adequate Patent applications.

9.5 All scientific publications reporting research results from Program activities shall acknowledge that support for such research was provided by Monsanto.

9.6 Upon written request to the Advisory Committee, Monsanto shall receive adequate samples of all available scientific materials isolated or developed in the Program, and shall have the right to use

the same for research and/or commercial purposes, but subject to the provisions herein with respect to confidentiality, Patents and licenses. Monsanto's rights to receive and use samples as provided in this Paragraph 9.6 shall not be denied but shall be subject to reasonable modification for good reason as deemed necessary by the Advisory Committee.

ARTICLE X - CONFIDENTIALITY

10.1 Technical Developments and Patents shall be the sole and exclusive property of the University subject to the license rights provided under Article XI.

10.2 Monsanto shall take reasonable precautions to safeguard, in a manner comparable to that used to protect its own confidential technical information, unpublished Technical Developments and not disclose the same to others for a period of two (2) years after receipt; provided, however, that Monsanto shall not be liable for unauthorized disclosure of Technical Developments in spite of such precautions. With respect to any particular identified Technical Development for which good cause can be shown, the University may extend the two (2) year period for an additional period of two (2) years by notice in writing to Monsanto stating reasonable justification therefor and that to the University's knowledge none of the exceptions of Paragraph 10.3 is applicable. After said initial two (2) year period or extension thereof Monsanto shall be under no restrictions as to revelation of any Technical Developments. Subject to the provisions herein with respect to Patents and licenses, Monsanto shall at all times be free to use Technical Developments.

10.3 The Monsanto obligation specified in Paragraph 10.2 shall not extend to Technical Developments which:

a) become a part of the public domain or of the public knowledge through no fault of Monsanto; or

b) were in the possession of Monsanto prior to disclosure by the University, and such possession by Monsanto is documented; or

c) are received by Monsanto lawfully and properly from a third party; or

d) have been revealed in patent applications.

10.4 Close cooperation between Monsanto personnel and University personnel in the conduct of activities required by or contributing to the purposes of this Agreement may involve the disclosure of Monsanto confidential information to such University personnel. Since, as a practical matter the University is not able to make commitments of confidentiality on behalf of its faculty nor control the confidential information disclosed to them, it shall advise all Program and Project

participants that they will be required to sign in advance of receiving Monsanto confidential information personal commitments of confidentiality as Monsanto deems necessary in the circumstances.

ARTICLE XI - PATENTS AND LICENSING

11.1 Whenever the University reasonable feels a need therefor it may request Monsanto to provide in writing a preliminary indication of its current interest in commercializing Technical Developments resulting from a Project. However, Monsanto shall not be obligated to carry out commercialization.

11.2 Monsanto shall have the right and obligation to monitor progress of each Project through its representatives on the Advisory Committee and through access to University Program participants and reports, or by such other arrangements as may be mutually acceptable to Monsanto, the Program Director, and the Project Investigators as appropriate. The primary purpose of such monitoring is to detect potentially patentable inventions as early as possible. The University shall have the obligation to disclose promptly to Monsanto all potentially patentable or scientifically novel Technical Developments.

11.3 When in the judgment of Monsanto potentially patentable inventions are developed within a Project, Monsanto shall make a report of such to the University, with its views of further research that may be necessary to establish the nature and scope of these inventions, and to the extent then possible its opinion of the potential importance of such invention to commercialization prospects, and its interests concerning the licensing by Monsanto under any Patents that may be obtained covering such inventions. The information in said report shall be retained in confidence by the University and used only for purposes of this Agreement.

11.4 When in the judgment of the University potentially patentable inventions are developed which have not yet been identified by Monsanto through the processes described in Paragraphs 11.2 and 11.3 the University shall make a report of such to Monsanto, including all available results and conclusions. Thereupon, Monsanto shall prepare and make its report to the University as specified in Paragraph 11.3.

11.5 When Monsanto has indicated its interest in a license under prospective Patent rights to an invention it shall promptly cause its patent attorneys to file and prosecute in good faith a United States Patent application on such invention. Monsanto shall also effect the filing and good faith prosecution of foreign Patent applications corresponding to the United States application in whatever countries Monsanto by written notice to the University indicates its interest in a license under prospective Patent rights.

11.6 Until such time as Monsanto notifies the University in writing that it no longer has an interest in a license, or until the expiration of the time specified in Paragraph 11.14 during which time

Monsanto has not given notice of its election to take a license, Monsanto agrees to bear the cost for filing and prosecution of Patent applications under Paragraph 11.5 and the issuance and maintenance of Patents thereon. Monsanto shall not be required to prosecute any such Patent application beyond the point of final rejection by the assigned Primary Examiner in the United States Patent and Trademark Office or the equivalent stage of prosecution if a foreign application. The University, at no cost or obligation or liability to Monsanto, may take action to file or prosecute any Patent application or have issued or maintain any Patent on which Monsanto elects not to take such action. Any such election by Monsanto shall be promptly communicated to the University and in adequate time to allow the University to take such action if it so desires. Monsanto's right to a license thereunder shall not thereby be diminished.

11.7 With respect to Patent applications filed and prosecuted and Patents issued or maintained by Monsanto under Paragraphs 11.5 and 11.6, the University at its own expense may designate and retain patent counsel of its own who shall be permitted to review such Patent applications and proposed responses to Patent Office actions thereon and issuance and maintenance of Patents and to consult with Monsanto's patent attorneys before Monsanto takes action thereon. However, the control of such filings, prosecutions, issuances and maintenances shall rest with Monsanto unless it elects to relinquish such control to the University under Paragraph 11.6 by timely written notice. The University may at any time elect by notice in writing to Monsanto to assume at University's cost those activities undertaken by Monsanto under Paragraphs 11.5, 11.6, and 11.7 on behalf of the University in regard to any Patent application or Patent, and Monsanto's right to a license thereunder shall not thereby be diminished.

11.8 Title to all Patent applications and Patents issuing thereon covering Technical Developments made only by University or non-Monsanto personnel or jointly with Monsanto personnel shall be in the University. Any royalties payable with respect to the latter shall take into consideration the relative contributions of the University and Monsanto coinventors.

11.9 The parties, including the inventors, Project Investigators and Program Director, shall do all acts necessary or desirable to provide Monsanto patent attorney with all information and records and execution of all documents necessary or desirable in the evaluation of Technical Developments, and in the filing and prosecution of Patent applications thereon, and in obtaining the issuance and maintenance of any Patents issuing from such Patent applications.

11.10 The University shall take all necessary and desirable actions, including the signing of Agreements of Program Participants (Exhibit A) by each of the persons participating in the Program, including the Program Director, all Project Investigators, and all other persons involved in the research, to assure that it acquires sufficient title to all Technical Developments, Patent applications and patents from those of its personnel making such so as to be entitled to grant licenses to Monsanto as specified in this Agreement.

The Program Director shall maintain a file of such signed Agreements of Program Participants which shall at all times be available to Monsanto representatives and upon request the Program Director shall provide Monsanto copies of specified Agreements.

11.11 In consideration of Monsanto's financial and other support of the Program and of the Patent work and cost thereof to be undertaken by Monsanto under this Article XI, the University agrees that it will make no claims against and hereby waives any claim it may have against Monsanto or its employees for injury, loss or damage resulting from acts of omission or commission by Monsanto, its employees or agents, in connection with the preparation, filing and prosecution of Patent applications and the obtaining and maintaining of Patens covering Technical Developments.

11.2 Each inventor of a potentially patentable Technical Development, no later than the time of signing a Patent application thereon, shall be requested to agree, for the considerations recited in Paragraph 11.11, to make no claims against and to waive any claims he or she may have against Monsanto or its employees for injury, loss or damage resulting from acts of omission or commission by Monsanto, its employees or agents, in connection with the preparation, filing and prosecution of Patent applications and the obtaining and maintaining of Patens covering Technical Developments. Should any inventor decline to so agree, any Patent application on such TEchnical Development shall be filed and prosecuted and Patents obtained and maintained by the University, at its own cost, and Monsanto's right to a license thereunder shall not thereby be diminished.

11.13 Notwithstanding any other provision of this Agreement, the University agrees to hold harmless, indemnify and defend Monsanto and its employees from all liabilities, damages, costs, expenses (including attorneys fees) and losses resulting from any claim or any lawsuit or any settlement thereof made by the University or by Monsanto with the University's consent, by the University's employees or third party having an interest through the University or its employees, and arising out of acts of omission or commission in regard to the obligations undertaken by Monsanto or its employees under Paragraphs 11.5, 11.6, 11.7.

11.14 The University hereby agrees to grant to Monsanto licenses to make, have made, use and sell under Patents, including the right to grant sublicenses, in such countries as Monsanto may elect. Such election for any Patent shall be made within two (2) years after the filing of a Patent application in the affected country, provided, however, that Monsanto shall not be required to negotiate the terms of a license agreement until after the relevant Patent has issued.

11.15 License grants to Monsanto of rights to Patent applications and Patents issuing thereon for inventions made solely with Monsanto support shall be exclusive for the life of such Patents. For any invention made with the joint support of Monsanto and funds provided by another sponsor, or in which there is a third party inventor, such license shall, whenever legally possible, be exclusive for the life of

the Patents. However, if the University is unable to grant a license which shall be exclusive for the life of the Patent, then the University shall provide Monsanto with the maximum rights permitted by law. In connection with the transfer of Patent rights to be negotiated under this Agreement the parties shall consider the benefits relative to licensing as distinguished form transfer of title.

11.16 The University agrees to grant and hereby grants to Monsanto an irrevocable, world-wide, paid-up, non-exclusive license, to make, have made, use and sell, including the right to grant sublicenses, on all Technical Developments licensed under this Paragraph 11.16, and from use, sale or other disposition of products made by use of the said Technical Developments, by Monsanto, its affiliates, sublicensees or any party acting on behalf of same. This provision shall survive termination of this Agreement.

11.17 The University agrees to grant to Monsanto licenses on patents secured outside the Program to the extent the University has the right to so license and to the extent necessary for Monsanto to practice Technical Developments. For such patents the grant shall be on terms and conditions reasonable in the circumstances and shall include the right to grant sublicenses. Monsanto agrees to indemnify the University for liability arising from use of such patents licensed under this Paragraph 11.17 and from use, sale or other disposition of products mad by use of such patents, by Monsanto, its affiliates, sublicensees or any party acting on behalf of same. This provision shall survive termination of this Agreement.

11.18 License grants to Monsanto under Paragraphs 11.14 and 11.15 shall contain at least the following terms and conditions:

a) requirement that Monsanto by its own efforts or through sublicenses during the period of exclusivity make reasonable efforts to effect the lawful introduction of Licensed Products into the marketplace as early as practicable, consistent with Monsanto's sound and reasonable business practice and judgment. The requirement for introduction of a Licensed Product into the marketplace shall be deemed met if, in the exercise of Monsanto's sound and reasonable business practice and judgment, an alternative product serving essentially the same function has been introduced into the marketplace by Monsanto and with essentially the same benefits to the consuming public.

b) the right of the University to require Monsanto to grant a non-exclusive sublicense to a responsible party on fair and reasonable terms and conditions in the event the requirement of subparagraph a) above is not met.

c) requirement that during the period of exclusivity Monsanto submit a product development plan specifying its reasonable estimate of the schedule of key events to market entry and provide periodic reports of significant modifications to the

plan and progress against the plan to the University until market entry is achieved, and requirement that the University retain in confidence the information in said plan and reports and use only for purposes of the license.

d) right of Monsanto to sublicense others provided the University is notified to whom the sublicense was granted.

e) a royalty schedule based on net selling price of Licensed Product sold by Monsanto or its sublicensees. The University and Monsanto recognize that patent protection in only one factor contributing to commercial success of a product or process and that other factors, for example other patented inventions, unpatented know-how, technical and marketing skills, financial contribution and risk, nature and extent of market, nature and extent of competition, normal trade practices, and condition of the economy also plan an important part. Accordingly, rather than attempt at this time to establish royalty rates, the University and Monsanto declare their intentions to negotiate in good faith at the time of licensing, reasonable and fair royalties payable to the University by Monsanto on the commercial practice by Monsanto and its sublicensees of each Technical Development covered by a Patent licensed under this Article XI, taking into account the various factors contributing to the commercialization. If the University and Monsanto are unable to agree on royalty rates within six (6) months of the commencement of negotiation, the matter may be submitted to arbitration by either party and if so submitted by either party, shall be finally settled by arbitration conducted in accordance with the then-existing rules of conciliation and arbitration of the American Arbitration Association. Any such arbitration shall take place in St. Louis County, Missouri, before three (3) arbitrators, one of who shall be designated by Monsanto, one by the University and the third by the two so designated. If one party fails to designate an arbitrator within thirty (30) days after the designation of an arbitrator by the other party, the arbitrator who should have been chosen by the other party shall be appointed by the American Arbitration Association as soon as possible. In the event that the said two arbitrators designated by the parties are unable to agree upon a third arbitrator within thirty (30) days after the nomination of the last of the said two arbitrators, the third arbitrator shall be appointed by the American Arbitration Association as soon as possible. None of the arbitrators need be designated from any panel published by the American Arbitration Association or any other arbitration association. The arbitrators shall apply the laws of the State of Missouri. The decision by the arbitrators shall be binding and conclusive upon the parties, their successors and assigns and they shall comply with such decision in good faith. The University and Monsanto each shall pay its own costs and one-half of the costs of the arbitration.

f) provision that when a Licensed Product is sold but not as such and constitutes significantly less than all of the sold, an equitable adjustment shall be made in the net selling price of the thing sold to arrive at the net selling price for royalty calculations. When a Licensed Product is manufactured by or used in a process and the process is only a minor factor in the manufacture or use, an equitable adjustment shall be made in the net selling price.

g) provision that Monsanto payments required to be made to a third party for the right under a third-party dominating patent to make, use or sell a Licensed Product licensed hereunder shall be credited against one-half of the royalties due the University hereunder from sales of the same Licensed Product.

h) right of annual audit to confirm royalties on behalf of the University by a firm of accountants to which Monsanto has no reasonable objection.

i) indemnification of the University by Monsanto for liability arising from the manufacture, use, sale or other disposition of Licensed Products, by Monsanto or its affiliates, sublicensees or any party acting on behalf of same. This provision is to survive termination of the license agreement.

j) law of Missouri shall apply.

k) Such other provisions as the parties may mutually desire, and, in the case of an exclusive license of an invention jointly supported by the government, such provisions as the government may have validly required the University to include.

l) Patent Infringement procedures:

(1) If at any time a third party shall infringe a Patent licensed to Monsanto hereunder, then Monsanto may either (i) obtain a discontinuance of such infringing operations; (ii) bring suit at Monsanto's expense against such infringer in the name of Monsanto, or in the name of the University and Monsanto if the University is a legally indispensable party; or (iii) permit the University at its option to bring such suit at its own expense. The party who brings suit shall control the prosecution and any settlements thereof, and the other party shall be entitled to be represented therein by counsel of its own selection at tis own expense.

(2) From any recovery from such suit or settlement thereof there shall first be paid the expenses of the party

bringing the suit, then the expenses of the other party hereto if represented by counsel, and the balance shall be divided two-thirds to the party bringing the suit and one-third to the other party, unless the parties agree otherwise.

(3) Before bringing suit Monsanto shall fully inform the University, and give careful consideration to the views of the University in making its decision whether or not to sue.

(4) If Monsanto decides to sue and University is a legally indispensable party, the University shall have the right to assign to Monsanto all of the University's rights, title and interest in the Patent of Patents concerned, in which event suit by Monsanto on such Patent or Patents shall thereafter be brought or continued solely in its name if the University is no longer an indispensable party. Patents so assigned by the University to Monsanto shall remain subject to the same royalty and all other terms and conditions of this Agreement.

11.19 Commencing with the fourth and subsequent years in which royalties are due to the University pursuant to licenses contemplated under this agreement, Monsanto shall be entitled to a credit, not to exceed 25% of the gross royalties due for the commercialization of Licenses Products in each year, (a) of Monsanto's cumulative our-of-pocket costs (excluding the costs of Monsanto's employees) for patent activities under Paragraphs 11.5 and 11.6 and (b) 50% of all payments made prior to the date of crediting by Monsanto to the University under Article VIII hereof, which payments can be related to the cost of development of those commercialized Licensed Products.

11.20 Should Monsanto not indicate interest to take a particular license from the University, or subsequently decide not to enter into the license agreement, or terminate the license agreement, or should such agreement be justifiably terminated by the University without challenge or objection by Monsanto, then the University shall be free to license to others the subject matter so released, without further obligation to Monsanto. However, such licenses to others shall exclude Licensed Products directly competitive with or substantially equivalent to those Monsanto has licensed.

11.21 Upon the indication by Monsanto of in interest in any Technical Developments and that Monsanto desires to commence activities directed at transferring such technology to its laboratories, then the Program Director shall participate with Monsanto representatives, the Project Investigators and others as may be appropriate to work out mutually acceptable actions to be taken to effect such technology transfer, including activities contemplated under Paragraphs 6.2 and 9.6, all at no added cost to Monsanto.

or negligence, and the University shall defend, indemnify and hold Monsanto harmless (using funds other than those paid to University pursuant to the provisions of Article VIII hereof) from any and all claims, costs or liability for any such loss, damage, injuries or loss of life, other than that attributable in whole or in part to Monsanto's fault or negligence.

13.3 Monsanto agrees to defend, indemnify and hold the University harmless from any and all claims, costs or liability for any loss, damage, injury or loss of life, other than that attributable in whole or in part to the University's fault or negligence, arising as a result of any Monsanto Employee working in the laboratories of the University as provided under Paragraph 6.2.

ARTICLE XIV - TRANSFER OF INTEREST

14.1 Neither this Agreement, nor any of the rights and obligations stated herein or resulting therefrom, may be assigned, transferred or otherwise disposed of by either party without the prior written consent of the other unless such assignment, transfer or disposition is to a successor to all the business of the transferor which pertain to the subject matter of this Agreement, and provided that such successor shall agree in writing with the other party to assume all the obligations of the transferor to the other party.

14.2 Should it become necessary or desirable for the University to subcontract any of the Program research to others, such research shall be performed under a formal subcontract satisfactory to Monsanto by which the subcontractor accepts all appropriate provisions of this Agreement and other such provisions as are necessary.

ARTICLE XV - NOTICE

15.1 Any notice or report required or permitted to be given under provisions of this Agreement shall be in writing and be sent by first class mail or hand delivered:

a) If to Monsanto, to:

G. Edward Paget, M.D.
Director, Health Care Development
Monsanto Company, 02F
800 North Lindbergh Boulevard
St. Louis, Missouri 63167

with a copy to:

Mr. John E. Maurer
General Patent Counsel
Monsanto company, E2NA
800 North Lindbergh Boulevard
St. Louis, Missouri 63167

b) If to the University, to:

David M. Kipnis, M.D.
Chairman, Department of Medicine
Washington University School of Medicine
660 South Euclid Avenue
St. Louis, Missouri 63110

with a copy to:

Mr. Edward L. MacCordy
Associate Vice Chancellor for Research
Washington University
Lindell & Skinker Boulevards
St. Louis, Missouri 63130

15.2 Either party may change the address or the person(s) designated to receive notice by notifying the other in writing of the change.

ARTICLE XVI - GENERAL PROVISIONS

16.1 Except as provided in Paragraph 9.5, neither party shall use the name of the other party, its affiliated organizations or its personnel in advertising promotional materials or news or press releases pertaining to the subject matter of this Agreement without prior written consent of such other party.

16.2 This Agreement shall be construed under the laws of the State of Missouri.

16.3 No waiver of any default, condition, provisions or breach of this Agreement shall be deemed to imply or constitute a waiver of any other like default, condition, provision or breach of this Agreement.

16.4 The Article headings used in this Agreement are for convenience only and form no part of the Agreement.

16.5 This writing constitutes the entire Agreement between the parties hereto relating to the subject matter of this Agreement and there are no understandings, representations or warranties of any kind except as expressly provided herein. Neither this Agreement, nor any term or provision thereof, may be discharged, waived, released, abandoned, changed or modified except by an instrument in writing signed by a duly authorized representative of each of the parties to this Agreement. If either party desires a modification or change of any kind in this Agreement, the parties shall, upon reasonable notice of the proposed modification or change by the party desiring the change, confer in good faith to determine the desirablitiy of such modification or change.

16.6 The parties agree that it is the intention of neither party to violate any valid federal, state and local laws and regulations; that is any sentence, paragraph, clause, or combination of the same in

this Agreement is in violation of any applicable law or regulation, or is unenforceable or void for any reason whatsoever, such sentence, paragraph, clause or combinations of the same shall be inoperative and the remainder of the Agreement shall remain binding upon the parties.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed in duplicate by their duly qualified officers.

THIS CONTRACT CONTAINS A BINDING ARBITRATION PROVISION WHICH MAY BE ENFORCED BY THE PARTIES

WASHINGTON UNIVERSITY

By_____

William H. Danforth
Chancellor

Date_____6/1/82____

MONSANTO COMPANY

By_____

John W. Hanley
Chairman of the Board

Date_____6/3/82____

EXHIBIT A

AGREEMENT OF PROGRAM PARTICIPANTS

The purpose of the following agreement is to describe the responsibilities of and to enlist the support and cooperation of research participants and to insure compliance with relevant University policies.

Therefore, as a participant in a research project under the Biomedical Research Program sponsored and funded by Monsanto Company, I agree to abide by the following terms and conditions:

1. PATENTABLE INVENTIONS:

(a) Participants will promptly disclose to the University's Program Director any potentially patentable invention or novel scientific development they produce in any research Project funded by Monsanto. Such disclosure will occur prior to disclosure to any other non-Program participant.

(b) Participants will, upon request, assign rights to patentable inventions to the University so that it may grant required licenses to the sponsor.

(c) Participant inventors will cooperate with Monsanto and University patent attorneys in the filing and prosecution of patent applications. Due to the major expense and specialized professional assistance required to pursue patent rights in a research program of this magnitude, Monsanto has assumed this responsibility. The University will monitor these efforts and at its option may assume such responsibility on a case by case basis.

(d) In consideration of Monsanto's willingness to file and prosecute patent applications at its own expense, participant inventors will be requested to waive any claim of liability by Monsanto in these efforts. Otherwise, the University must assume this responsibility and its expense.

(e) Any royalties from licensed inventions received by the University will be distributed as follows: 40% to the research laboratory(ies) in which the invention was made, 40% to the cognizant department(s), and 20% to the School of Medicine.

2. PRODUCTS OF RESEARCH:

(a) New materials, processes, devices, scientific information, and any other research products isolated or developed in a project, whether patentable or not, will be made available to Monsanto for its evaluation and general use.

(b) Such research products may be made available to other research scientists at non-profit institutions according to normal academic practice. However, recipient scientists should agree not to further distribute such research products and not to use them for the benefit of another commercial firm. Distribution of potentially patentable research products should not be made until Monsanto has evaluated patentability and, if appropriate, filed a patent application.

3. PUBLICATIONS:

(a) Scientific advances made under this research program will be freely reported in the scientific literature.

(b) Two (2) copies of each proposed publication, including abstracts, in the best form then available will be provided to the Program Director at least one (1) month before being submitted for publication.

(c) Based on a review by Monsanto patent attorneys of the proposed article, a brief delay in its submission for publication may be necessary to allow the filing of adequate patent applications. Such brief delay may occasionally be necessary to avoid the loss of patent rights.

(d) Two (2) copies of the final abstract and article as submitted to the publisher shall be simultaneously provided to the Program Director.

(e) Each publication will acknowledge Monsanto Company support of the research being reported.

(f) Prior to the evaluation of research results for potentially patentable inventions, participants will use caution in public or other outside presentations and discussions not to prematurely disclose critical technical information which could result in the loss of patent rights.

4. COOPERATION WITH MONSANTO:

(a) It is intended that there be mutually productive and continual interchange between the University and Monsanto scientists. For this purpose a Monsanto Project Scientist will be appointed as the primary company contact with each Project Investigator. Each Project Investigator will be available for consultation with the Monsanto Project Scientist on matters concerning the project.

THE
UNIVERSITY
OF UTAH

PATENT AND
PRODUCT
DEVELOPMENT

OFFICE OF THE DIRECTOR
391-G CHIPETA WAY
SALT LAKE CITY, UTAH 84108
(801) 581-7792

3 December 1985

Bruce Merrifield, Ph.D.
U.S. Department of Commerce
14th and Constitution, N.W.
Room 4824
Washington, D.C. 20230

Dear Bruce:

The following is a brief summary of the activities of our office at the University of Utah. I am also enclosing a copy of the brief paper I presented at a recent meeting of the Association for the Advancement of Medical Instrumentation.

The principal purpose of the Patent and Product Development Office is technology transfer through the disposition of intellectual property via patenting with subsequent licensing or other suitable technology transfer arrangements. These activities are summarized by our invention disclosures which number 1170 to date, 54 U.S. patent applications filed or in progress during 1984, more than 86 foreign applications which are currently in progress; and 176 issued U.S. patents which are on file in our office.

We have 64 active license agreements, 24 of which are with company startups and reflect an equity position with an additional 22 agreements in the review stage, 14 of which have proposed equity positions.

We are proud of our academic environment which encourages our researchers and fosters the transfer of the technologies they develop. I appreciate this opportunity to further explain the purpose and activities of our office. I enjoyed becoming acquainted during my my recent trip to Washington and thank you for your time.

Very truly yours,

UNIVERSITY OF UTAH

J. Winslow Young, Director

RECEIVED
DEC 9 1985
D. BRUCE MERRIFIELD

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Enclosure: "Academic Capitalism
at the University of Utah"

ACADEMIC CAPITALISM
AT THE UNIVERSITY OF UTAH

J. Winslow Young, Director
Patent and Product Development Office

Academic capitalism, whereby academic research encourages economic growth, is thriving at the University of Utah. At least three dozen companies have been created based upon technology from the University. Since 1981 the University of Utah Research Foundation acting on behalf of the University has also negotiated an equity position in twenty-five of these emerging companies as part of the license.

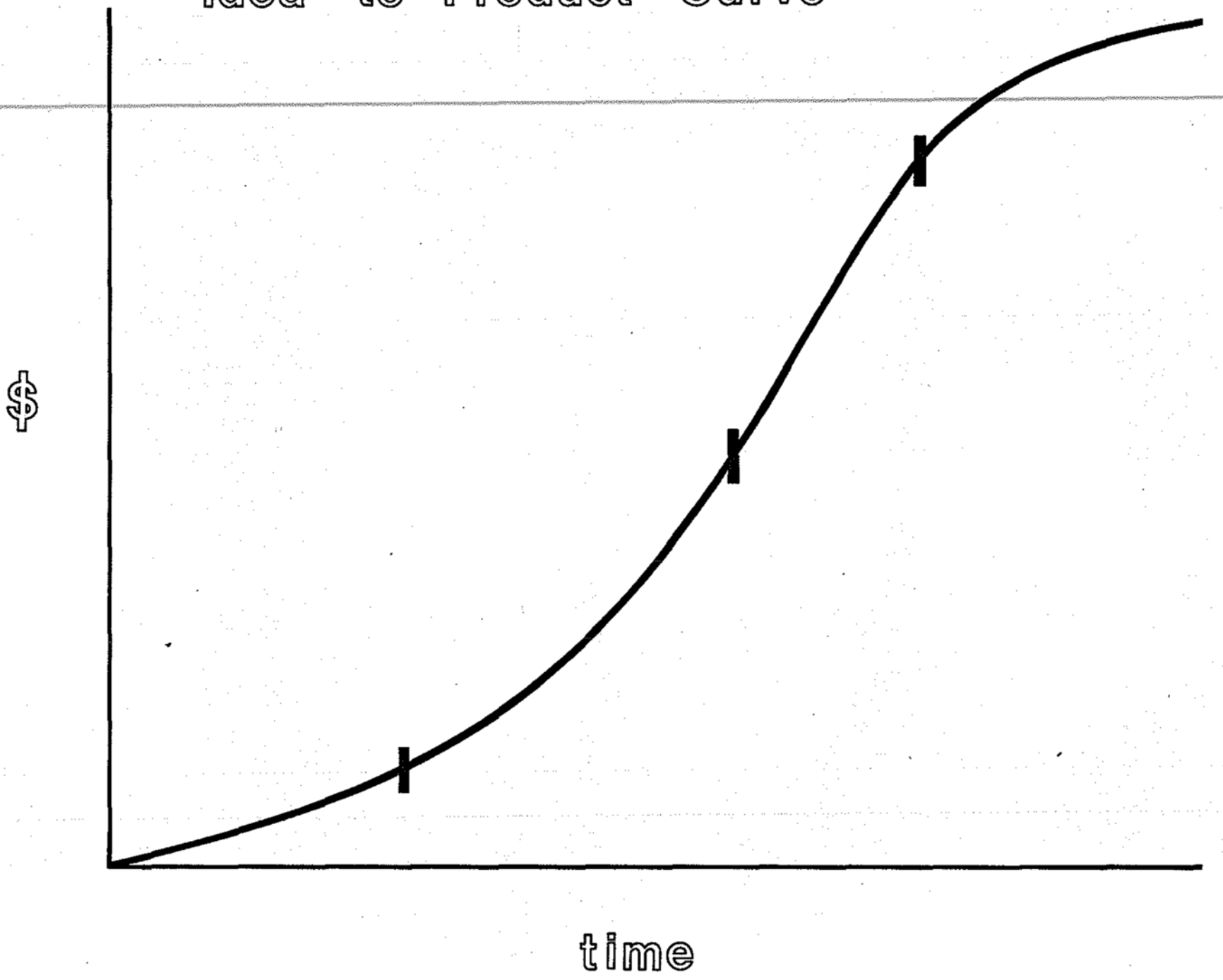
The artificial heart represents one facet of the technology transfer program of the University of Utah. The exciting advances being made in its ongoing development could only have resulted from the efforts expended through a commercial enterprise.

In addition to the artificial heart these emerging companies are supporting research and/or are providing commercial products in the following areas of medical technology: wearable artificial kidney, artificial arm, synthetic vascular graft, artificial ear, subcutaneous peritoneal access device, nerve repair prostheses, iontophoretic drug delivery, biocompatible materials, high frequency ventilator, anesthesia delivery, anesthesia monitoring, surgical laser control, cell culture, ultrasound imaging, pharmaceutical software, magnetically suspended blood pump, artificial fallopian tube, artificial urinary tract, and medical sensors. Venture capital attracted by these emerging companies is estimated to be in excess of thirty million dollars of which approximately 10% has been directed back into the University in the form of grants and sponsored research projects.

The technology is transferred by a license. In any license arrangement great care is taken to assure that there is no adverse affect on the academic/research mission of the University. Specific attention is directed to the areas of freedom to publish and conflict of interest.

In conclusion, while the University of Utah is clearly not a commercial enterprise, it does recognize its important position as a technology resource and has taken an affirmative position in making that technology available to the commercial sector.

Idea to Product Curve



August 15, 1988

MEMORANDUM TO: FILE
cc: Richard Carlin
cc: Donald L. Fruehling
cc: Norman Latker ✓
cc: L. W. Miles

FROM: JACK J. KARNOWSKI

SUBJECT: TIC MEETING NOTES

°TIC Review

°David Brown -- History
Data base effort -- Hart/Brown/Latker because of passage of U.S. technology exchange
°Carlin -- Demonstration of system
Will be operational January 1, 1989
°Fruehling - Must develop overall plan
°When is software done?
°Cost of software? — ACTION KARNOWSKI
°Data base -- What goes in?
NCTR
FEDREP (others) — ACTION LATKER
UPI - UTC Universities
Other Labs
°Marketing
Universities
Government labs
Corporations — NEED TO DEVELOP
Vendors — PLAN - MILES
Foundations — WILL INITIATE
International

°Marketing Expert - Miles
°Should try to get Pergamon Journal contributions involved

°Who's responsible for determining what get's on?
What format?
What Priority? — ACTION LATKER
How do you deal with junk?

°Hypertex -- Bill Miles will have some one look into patenting

°Work out deal to set up "Chinese Wall" between TIC and Telescan. JJK will work out formal cost-billing reimbursement, which will be cut down to bare essentials.

ACTION KARNOWSKI
(Will be completed in August)

°Hart Meeting

Hart indicated he's comfortable with software progress. Lag has hurt us -- he thinks if we were 3-6 months ahead of current schedule, we could have gotten more government laboratories on system.

Hart Vision of TIC

I. Manage Resource at Local Level
(People - equipment - space - supplies) - Estimate monthly time charges to Hart $5,000 to $10,000
I.a -- If you get a number of government laboratories on system you could greatly improve overall resource management.

II. Second level - Technology Transfer
°Big boss gets recognition
°Scientist gets money
°Political value -- helps U.S. competitiveness
°Foundations can get involved to protect tax status to fund products they want
°Use for presentation of scientific funds and publications
°Great way to communicate in scientific arena

III. Recruiting - Placement
°Graduates
°Post Doctorates
°Mentors

TIC system could help this process immensely; advertising costs are very high and not productive.

Vendors -- Cost Hart a fortune to process purchase orders. One purchasing agent for 14 scientists. Purchasing people are not technical. Have hard time ordering--buy over 1,000 books.

IV. Mature communication mechanism

TIC user friendly, method will make it easy for scientists.

In order for Hart to be successful, we need TIC in other government laboratories; we're missing the window of opportunity. All laboratories starting their own system.

We need parallel efforts, a giant pert chart.

- °R&D software
- °Marketing Plan
  - °Game plan -- what goes into data base?
  - °University Marketing
  - °Government laboratory marketing
  - °Corporations
  - °Vendors
  - °Foundations

This takes a big marketing type horse.

In order to keep Hart happy, we need to keep him posted on developments and our game plan. If we move to get more laboratories, he would be willing to help us. Also he could get a handful of corporations to work with us during the debugging period.

Hart is looking for a more comprehensive system for managing technology resources--not just technology exchange.

Jack J. Karnowski

JJK:sb

COMPANIES FOUNDED UPON UNIVERSITY TECHNOLOGY
(*indicates equity position)

(*)ANESTA CORPORATION

Anesta Corp.
William C. Moeller
1909 East Baywood Drive
Salt Lake City, Utah 84117
(801) 272-6336

Product/Services: Anesta Corporation has been licensed under technology developed by Theodore H. Stanley M.D. Anesta is developing the Anestapop (tm) a unique anesthetic delivery system wherein the anesthetic is incorporated into a lollipop.

(*)BIOMATERIALS INTERNATIONAL, INC.

James C. McRea, Ph.D., President
P.O. Box 8852
Salt Lake City, Utah 84108-0852
(801) 583-8444

Product/Services: Biomaterials International (BI) provides consulting and/or R&D to the biomedical, polymer, and pharmaceutical industries. BI's areas of expertise include polymer synthesis and characterization, blood and tissue compatibility, membrane permeation, drug delivery systems, organic synthesis, and materials fabrication and evaluation.

(*)BIOMEDICAL LASER INDUSTRIES

David C. Whipple, President
64 East 6400 South
Suite 235
Salt Lake City, Utah 84107
(801) 266-3356

Product/Services: BioMedical Laser Industries is involved in locating funding sources and providing marketing or licensing for completed medical and research and development projects. They are currently involved in laser and other instrument development specifically related to the medical profession.

(*)BUNNELL, INC.

J. Bert Bunnell, Sc.D., President
417 Wakara Way
Salt Lake City, Utah 84108
(801) 582-0800

Product/Services: Bunnell, Inc. was formed with the assistance of the Utah Innovation Center and is presently manufacturing an air pressure monitor that signals the nurse if a patient's respirator is not working properly. In development is a high frequency ventilator for infants and children.

(*)CARDIAC SYSTEMS, INC.

10% Equity
10% Royalty

Jacob Kolff, M.D.
301 Mill Street
Bridgeport, PA 19405

Product/Services: Cardiac Systems licensed the vacuum forming techniques to manufacture ventricular assist devices, artificial hearts and artificial heart valves developed by Willem J. Kolff at the University of Utah Center for Biomedical Design.

CERAMATEC, INC.

Ronald S. Gordon, Sc.D., President
163 West 1700 South
Salt Lake City, Utah 84115
(801) 487-5411

Product/Services: Ceramatec is licensed under several patents involving ceramics for various applications and is conducting sophisticated research in high-tech ceramic materials and their applications.

(*)COMPUTER GEOMETRY SYSTEMS, INC.

Richard F. Riesenfeld, Ph.D., President
1337 Harrison Avenue
Salt Lake City, Utah 84108
(801) 583-2815

Product/Services: Computer Geometry Systems Inc. (CGS) is primarily involved in the research and development of computer-aided design and manufacture. Its license agreement includes computer software system components, processes, formulas, equipment and improvements relating to the "Alpha 1 System" for use in computer-aided geometric design.

✓(*)CONTEXTURE, INC.

5% Equity

Lee A. Hollaar, Ph.D., President
P.O. Box 8721
Salt Lake City, Utah 84108
(801) 363-8086

Product/Services: Contexture Inc. is involved in information retrieval hardware, software, and workstations developed under the direction of Lee A. Hollaar at the Universities of Illinois and Utah. Dr. Hollaar's area of specialization is custom computer architectures for text information retrieval.

10% Equity (*)DC SOFTWARE, INC.

Dennis J. Crocker, President
4941 South 1021 East
Salt Lake City, Utah 84117
(801) 268-6059

Product/Services: DC Software licensed the software technology developed by Dennis Crocker while he was an employee at the University of Utah. Mr. Crocker now heads his own company and is providing software services to commercial users.

(*)DMS SYSTEMS, INC.

A. Timothy Maness, President
740 East 3900 South
Salt Lake City, Utah 84107
(801) 268-6671

Product/Services: DMS Systems, Inc. develops and markets database management software products for complex, data-intensive environments, such as scientific research.

6% Equity (*)DARBICK INSTRUCTIONAL SOFTWARE SYSTEMS, INC.

Richard C. Brandt, Ph.D., Chairman
P.O. Box 81157
Salt Lake City, Utah 84108
(801) 581-6076

Product/Services: Darbick Instructional Software Systems Inc. (Darbick) was formed for the purpose of providing update and maintenance services to the computer-aided instructional software developed at the University of Utah. The creation of Darbick was necessitated by the realization that the University of Utah did not have the ongoing capability to provide continuous update and maintenance services to this important software package.

DESERET MEDICAL, INC.

David J. Lentz, Vice President
9450 South State Street
Sandy, Utah 84070
(801) 255-6851

Product/Services: Deseret Medical Products Inc. (Deseret) was licensed with the Cardiac Output Monitor Apparatus and Method developed by Richard A. Normann, Ph.D. Ongoing research is being supported at the University of Utah by Deseret for this important and exciting development.

(*)DESERET RESEARCH, INC.

James L. Sorenson, President
520 Wakara Way
Salt Lake City, Utah 84108
(801) 584-3222

Product/Services: Deseret Research was created upon the sale of portions of the University of Utah Research Institute (UURI) to James L. Sorenson.

(*)DIMENSIONAL TECHNOLOGIES, INC.

Gary L. Crocker, President
1847 West 2300 South
Salt Lake City, Utah 84119
(801) 972-5500

Product/Services: Dimensional Technologies Inc. was licensed with the 3-D viewer development which was under license from the Mitre Corporation to the University of Utah where substantial additional developmental work occurred in the Department of Radiology.

(*)EDL CORPORATION

Robert L. Springmeyer Jr.,
President
Salt Lake International Center
4759 Wiley Post Way #110
Salt Lake City, Utah 84116
(801) 539-1122

Product/Services: Group Technologies Incorporated through its EDL development laboratories is currently supporting ongoing research on a neuromuscular blockade technology developed in the Department of Anesthesiology of the School of Medicine. The University of Utah will receive an equity position in a corporation to be formed around this technology.

Product/Services: Group Technologies Incorporated has also been licensed with the medical laser technology and computer control of medical lasers developed by John A. Dixon, M.D. and Homer Warner, M.D., of the School of Medicine.

EVANS AND SUTHERLAND

David C. Evans, Ph.D., President
560 Arapeen Drive
Salt Lake City, Utah 84108
(801) 582-5847

Product/Services: Evans and Sutherland was originally licensed under a non-exclusive license for 4 patents involving computer technology developed at the University of Utah while Dr. David C. Evans and Ivan E. Sutherland were in the Department of Computer Science.

(*)FIELDS FINANCIAL CORPORATION

Randall K. Fields, President
P.O. Box 680370
Park City, Utah 84068-0370
(801) 649-1304

Product/Services: Fields Financial Corporation is currently supporting research in the culture of mammalian cells. This technology has been developed by Catherine F. Rappaport, Ph.D., of the College of Bioengineering. The University of Utah Research Foundation will receive an equity position in a corporation being formed by Fields Financial Corporation to further commercialize this technology.

(*)LIFE EXTENDERS CORPORATION

Donald B. Olsen, D.V.M.
President
8832 Blue Jay Lane
Salt Lake City, Utah 84021
(801)581-6991

Product/Services: Life Extenders Corporation is supporting research and development of a magnetically suspended blood pump and urinary tract prosthetics.

METALS MANUFACTURING COMPANY

Stanley M. Tschaggeny, Ph.D.
Secretary-Treasurer
2395 South 2570 West
West Valley City, Utah 84119
(801) 972-0911

Product/Services: Metals Manufacturing Company has been manufacturing and producing a novel display stand invented by Professor Robert Bliss, Dean of the Graduate School of Architecture.

(*)MOTION CONTROL, INC.

Mr. Thomas A. Wiita, President
1005 South 300 West
Salt Lake City, Utah 84101
(801) 364-1958

Product/Services: Motion Control, Inc. currently manufactures and sells the UTAH ARM(tm), PHORESOR(tm), and the SPAD (subcutaneous peritoneal access device). Both the UTAH ARM(tm) and PHORESOR(tm) are commercially available with limited sales being made worldwide. The SPAD is currently under an investigational device exemption and is being implanted for the intra-peritoneal delivery of insulin for diabetics.

(*)RESEARCH INDUSTRIES CORPORATION

Gary L. Crocker, President
1847 West 2300 South
Salt Lake City, Utah 84119
(801) 972-5500

Product/Services: Research Medical Inc. was formed by Research Industries Corporation and is licensed under the neural prosthesis technology developed by Larry J. Stensaas, Ph.D., of the Department of Physiology. FDA approval has been recieved with the prosthesis being available for use in early 1986.

(*)SARCOS GROUP, INC.

Stephen C. Jacobsen, Ph.D.
President
274 South 1200 East
P.O. Box 8881
Salt Lake City, Utah 84108
(801) 583-8330

Product/Services: Sarcos has been licensed by the University of Utah for the developments produced in the Center for Biomedical Design within the College of Engineering of the University of Utah. The primary focus of Sarcos is in the area of robotics and advanced research technologies.

(*)SOUTHERN CROSS VENTURES, INC.

Mr. Denny W. Nestripke, Director
311 South State Street, Suite 410
Salt Lake City, Utah 84111
(801) 355-0500

Product/Services: Southern Cross Ventures was created at the same time as Vascular International for the purpose of developing the nonmedical technologies formerly licensed to Biomedical Technologies in conjunction with the work of Donald J. Lyman, Ph.D.

(*)STATE-OF-THE-ART COMPANY

Jeffrey L. Fox, Ph.D.
3303 Chaundra Avenue
Salt Lake City, Utah 84124
(801) 581-7261

Product/Services: State-Of-The-Art Company is licensed under a pharmaceutical software technology developed by Jeffrey Fox, Ph.D., of the College of Pharmacy. This software is designed for pharmacists and other specialists in the field to enable them to evaluate the various medications received by a patient.

(*)SYMBION, INC.

Robert K. Jarvik, M.D., President
825 North 300 West
Salt Lake City, Utah 84103
(801) 531-7022

Product/Services: Symbion, Inc. is the manufacturer of the JARVIK-7(tm) artificial heart and the INNERAID(tm) artificial ear, both of which are currently being evaluated in patients. Symbion Inc. is actively supporting research at the University of Utah in the artificial heart and the artificial ear projects as well as supporting a joint research effort with MIT on the artificial ear. Symbion, Inc. also is working in the area of sophisticated electronic stethoscope technology.

(*)TECHNISCAN, INC.

Steven A. Johnson, Ph.D.
1155 East 300 South, #8
Salt Lake City, Utah 84102
(801) 581-7399

Product/Services: Techniscan has been licensed with the ultrasound imaging technology that has been developed by Dr. Steven A. Johnson primarily at the University of Utah. Dr. Johnson is currently organizing a company around this technology and the University of Utah has an equity position in this particular company.

UTAH INNOVATION CENTER, INC.

Don A. Stringham, Director
417 Wakara Way
Salt Lake City, Utah 84108
(801) 583-4600

Product/Services: The Utah Innovation Center Inc. formed an agreement that the University of Utah would transfer whatever rights it retained in technology developed by the Utah Innovation Center while the same was an organization within the University of Utah under the colleges of business and engineering while supported by a grant from the National Science Foundation. The University of Utah Research Foundation is to receive an equity position in the first investment pool established by the Utah Innovation Center Inc.

(*)VASCULAR INTERNATIONAL, INC.

Donald J. Lyman, Ph.D., President
4750 Wiley Post Way, Suite 140
Salt Lake City, Utah 84116
(801) 537-7137

Product/Services: Vascular International Inc. (VII) has been licensed under the synthetic vascular graft technology developed by Donald J. Lyman, Ph.D. Vascular International currently has approval from the FDA to conduct human implants of the synthetic vascular graft and work is currently progressing with this technology.

(*)WAK-UTAH, INC.

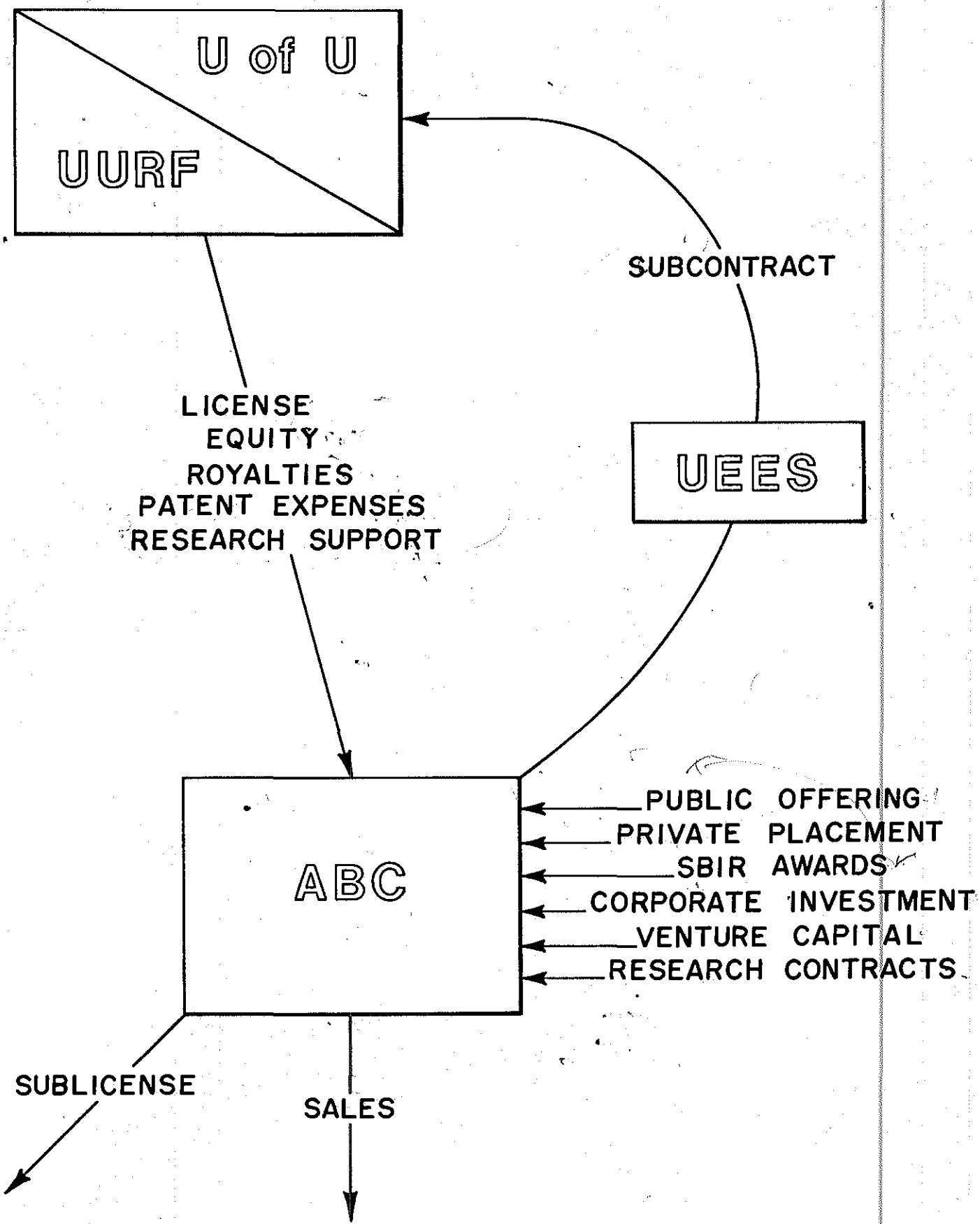
Mardee W. Hagen
c/o Division of Artificial Organs
535 Dumke Building
University of Utah
Salt Lake City, Utah 84112
(801) 581-6296

Product/Services: WAK-Utah is licensed under the wearable artificial kidney technology developed within the Division of Artificial Organs and the Center for Biomedical Design of the University of Utah. The device is a wearable, hemodialysis, hemofiltration and/or diafiltration apparatus.

(*)ZINETICS MEDICAL TECHNOLOGY CORPORATION

Russell G. Card, Executive Vice President
Number Nine Tempest Park
2212 South West Temple
Salt Lake City, Utah 84115
(801) 466-7809

Product/Services: Zinetics Medical Technology Corporation is licensed under the novel sensor technology developed by Jeffrey D. Owen, Ph.D. and Harold (Mack) Brown, Ph.D., of the Department of Physiology of the University of Utah.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page 1 (not included) is a form for names addressed signatures.

CONFIDENTIAL-DRAFT

[redacted]

WHEREAS, [redacted]., hereinafter referred to as the Cooperator, and the Agricultural Research Service of the U.S. Department of Agriculture, hereinafter referred to as ARS, desire to enter into an agreement to develop certain technologies related to the control of avian coccidiosis; and

WHEREAS, the Cooperator is authorized to cooperate with any other State, local, or national organizations or agencies whether voluntary or created by the law of any political division thereof, and to enter into contracts and agreements within and without the State; and

WHEREAS, the Cooperator is in a position and is willing to provide certain cooperation and funds to ARS for a study on embryo vaccination for the control of coccidiosis in chickens; and

WHEREAS, the evaluation of the efficacy of the respective technologies of ARS and the Cooperator to induce coccidiosis control and/or prevention is needed; and

WHEREAS, it is the intention of both parties to this Cooperative Agreement that such investigational work shall be for their mutual benefit, the benefit of the people of the poultry industry, and the benefit of the people of the United States;

NOW, THEREFORE, for and in consideration of the covenants and agreements herein contained, and for other good and valuable considerations, the parties mutually agree as follows:

A. Definitions:

1. Subject Invention shall mean any invention or discovery conceived or first reduced to practice in the course of work performed under this Agreement and any modifications to or extensions of this Agreement by an employee of ARS or, jointly, by an employee of ARS and by an individual employed by the Cooperator in whatever capacity and which such Invention may be patentable or otherwise protectable under Title 35 of the U.S. Code, under 7 U.S.C. 2321 et seq. or under the patent laws of a foreign country.

2. Patent License shall mean an exclusive license agreement covering one or more subject inventions. Such patent license shall contain terms and conditions which are consistent with the requirements of 35 U.S.C. Sections 209 (a), (b) and (f) and such other terms and conditions as may be reasonable under the circumstances and agreed upon through good faith negotiations.

B. The Cooperator Agrees:

1. To share in the costs of the research activity by contributing $20,000 to ARS upon execution of this Cooperative Agreement and such additional sums from time to time as may be mutually agreed upon for the conduct of cooperative research contemplated under this Cooperative Agreement. Additional contributions shall be made by amendment to the Cooperative Agreement.

2. Funds contributed for research will be deposited in the United States Treasury, through the United States Department of Agriculture, ARS, and will be expended according to pertinent Department of Agriculture regulations. Checks shall be made payable to the Agricultural Research Service, and shall be mailed to: USDA, ARS; Budget & Fiscal Officer, Beltsville Area; Bldg. 003, BARC-West; Beltsville, Maryland 20705.

3. To consult with representatives of ARS in planning the research activity to be performed under this Cooperative Agreement and in defining the criteria for evaluation.

4. Provide hatching eggs for subsequent incubation and vaccination.

5. Conduct in-ova administration of candidate compounds as provided by ARS.

6. Transport newly hatched chicks to the Animal Parasitology Institute, Beltsville, Maryland.

7. Assist in any purification required to improve the delivery and/or effectiveness of candidate compounds.

8. Keep complete accounts and records relating to the experimental trials as ARS may request. All such records shall be available for inspection by ARS at reasonable times and they, or true copies thereof, shall be delivered to ARS upon request.

9. Promptly make written disclosure to ARS of any inventions identified in paragraph D.12. which are relevant to this research agreement.

10. Treat subject inventions as it would its own proprietary property in order to preserve the opportunities for obtaining patents covering subject inventions.

11. That upon request, the Cooperator will provide to ARS all information in its possession pertaining to subject inventions which may be necessary or useful in the preparation, filing, and prosecution of patent applications covering subject inventions.

12. Provide written notification to ARS prior to abandonment or such other act which would cause a patent covering a subject invention to expire prior to its maximum allowable statutory period in the country where such action is contemplated. ARS shall have the right at its own expense to assume responsibility for such patent properties hereunder. Such patent properties shall be excluded from any patent license and ARS shall have the right to license such patent properties to third parties.

C. ARS Agrees:

1. To consult with representatives of the Cooperator in planning the research activity to be performed under this Cooperative Agreement.

2. To make available to the Cooperator the necessary materials for vaccination, feed, associated facilities, and labor as may be required by the Cooperator for the proper conduct of the research study.

3. To keep complete accounts and records relating to the experimental trials as the Cooperator may request. All such records shall be available for inspection by the Cooperator at reasonable times and they, or true copies thereof, shall be delivered to the Cooperator upon request. A final written report containing all data shall be supplied to the Cooperator by ARS within sixty (60) days of the completion of each trial.

5. Supply candidate coccidial antigens for in-ovo administration by the Cooperator.

6. Oversee and conduct the boosting and challenge phase of the trials.

7. To provide housing, feed, and rearing of birds for these trials.

8. To maintain and provide the parasite cultures needed for the challenge infections.

9. To collect the data, analyze results, and report thereon.

D. It is Mutually Understood and Agreed:

1. This study will involve 5 battery trials to determine the effectiveness of embryo vaccination for the subsequent protection of chickens exposed to a live oral challenge with avian coccidia. Specific, detailed protocols will be developed prior to each trial. In general, chicken embryos will be injected with antigens three days prior to hatch. These antigens may be either parasite fractions, extracts, or genetically engineered parasite antigens. Additional boosting immunizations may be given at various times

after hatching. The chickens will be exposed to an oral challenge with coccidial oocysts at a later date. Parameters measured to determined protection will include feed conversion, weight gain, mortality, and oocyst production. Other parameters including serum antibody levels may also be measured if deemed appropriate.

2. That funds contributed by the Cooperator for research remaining unobligated at the conclusion of any fiscal year may be utilized during any ensuing fiscal year in a continuation of the project herein described.

3. Facilities, equipment, and supplies purchased with ARS funds shall become and remain the property of ARS.

4. The research work conducted by ARS under this Cooperative Agreement shall be carried out according to plans mutually agreed upon and acceptable to both parties.

5. The Cooperator shall in no way be responsible for any injury to the property or person of ARS and ARS shall hold the Cooperator harmless from any claims or damages for any injury (including death) to third persons or to their property arising out of the presence, handling, or feeding of ARS' or the Cooperator's animals unless due solely to the negligence of the Cooperator or its employees. Claims for damages shall be handled in accordance with Federal Tort Claims Act procedures.

6. Research data which are collected, compiled, and evaluated under this Cooperative Agreement shall be shared and mutually interchanged by the Cooperator and ARS.

7. In order for ARS and the Cooperator to carry out this research study, it will be necessary for both parties to share certain technical or business information and sample materials which together are considered confidential information. ARS and the Cooperator agree that this confidential information will be used only for the purpose of this study and will ensure this security by not transferring this confidential information to any third party in accordance with Paragraph 8 below. The parties also agree not to have these materials analyzed and to return any unused compound to the party originally supplying the material at the termination of this study. ARS and the Cooperator also agree to bind any individual who will participate in said trial to this confidential clause.

8. Confidential information developed under this agreement shall be governed by the following procedures:

8.1. Confidential information not required for the successful completion of this research should not be shared with the other party of this agreement;

8.2. Confidential information required to successfully conduct the research and which normally would be included in scientific publications shall be protected by a period of confidence determined at the time of submission, but should not exceed one (1) year. Upon request by either party, the period of confidence will be extended for a period of up to one (1) additional year based upon justification provided by the requestor that is acceptable to the other party;

8.3. Confidential information required to successfully conduct the research but which does not need to be included in a publication (e.g. information on personal safety) will not be revealed without the permission of both parties.

9. The final results of this undertaking will be made available to both parties.

10. ARS reserves the right to publish the results of the study, excluding confidential information as prescribed in Paragraph 8 above. Before publication, ARS will give the Cooperator a thirty (30) day opportunity to review the manuscript and provide suggestions. However, final decision as to the content will remain with ARS. The Cooperator reserves the right to utilize the data in the final report in scientific and promotional literature.

At no time will the results be utilized in a manner to imply the endorsement of any product by ARS. Publication and/or other disclosure of the results of this cooperative research shall be delayed as necessary to preserve both U.S. and foreign patent rights on subject inventions arising from this agreement. The party requesting such a delay must demonstrate due diligence in seeking a patent on the invention.

11. Any public information released concerning work carried out under this cooperative agreement will describe the contribution of both parties to the research effort.

12. All rights, title and interests in a subject invention made under this agreement solely by an employee of ARS shall be owned by ARS. Any subject invention made jointly under this agreement by at least one employee of ARS and at least one employee of the Cooperator shall be jointly owned. Any invention made under this agreement solely by an individual employed by the Cooperator shall be owned by the Cooperator, provided ARS is granted a royalty free, nonexclusive, irrevocable license to practice the invention for U. S. Government purposes.

13. The Cooperator and ARS shall confer periodically to report subject inventions to each other and discuss which subject inventions shall be the subject of patent applications.

14. The Cooperator shall be entitled, pursuant to the requirements of Paragraphs D.12. and D.13., to obtain a patent license with the right to sublicense all subject inventions included hereunder. The Cooperator shall apply to the National Technical Information Service (NTIS), Department of Commerce for a patent license.

15. In the event that, after a period of good faith negotiations, NTIS and the Cooperator are unable to agree upon reasonable terms and conditions under which subject inventions would be included in a patent license, the rights and obligations of the parties hereto with respect to the subject inventions involved shall cease.

16. The continuance of the Cooperative Agreement is subject to passage by the Congress of the United States of America of an appropriation of funds from which expenditures may legally be made to cover ARS' contribution.

17. Copies of correspondence between the Cooperator and the Authorized Departmental Officer's Designated Representative shall be sent to the Authorized Departmental Officer, USDA, CAD; 4th Floor, NAL Building, BARC-W, Beltsville, Maryland 20705.

18. The duration of this Cooperative Agreement is as given in the Period of Agreement Block of the Form ARS-451, a part hereof. This duration is automatically extended to the duration of an exclusive license(s) granted the Cooperator to any patents arising under this Cooperative Agreement.