VII. PRO-FORMA EXAMPLE TRANSACTION

NOTE: The following example is not intended to reflect any actual situation nor to create a model or norm for determination of arrangements in any future UTECH - Client arrangements. In all cases in the future, the specifics of a particular transaction will be negotiated by the parties. Their views on the uniqueness of the technology, future costs and manufacturing and commercial viability, will determine the terms of negotiations.

1. Assumptions

A novel analytical instrument is developed at a RC client university. The annual worldwide market in which this instrument will compete, a field with few recent innovations, is estimated at approximately $100 million, and is currently projected to grow at a rate of 10% for the next eight years (the availability of the new instrument is expected to expand the market and accelerate this rate). The instrument exists as a rough "bread-board" model at the university.

A. Phase 1:

Approximately $100,000 ("pre-seed" capital) is needed to develop a test prototype instrument and to collect additional critical data that would further support the utility of the instrument. It is determined that the university and the inventor are capable of meeting these research objectives within six (6) months.

B. Phase 2:

The next step (assuming success in Phase 1) would be to design a "pre-manufacturing" prototype instrument and six prototypes. This may be accomplished by subcontracting the work locally, where the support of the university and inventor are readily available. The cost projected for this phase of activity is approximately $300,000 ("seed" capital) and it can be accomplished within nine (9) months. A further objective in this phase would be to place the six prototypes in established, independent laboratories for three (3) months to check for reliability and dependability.

C. Phase 3:

Again, assuming success and based on evaluation by UTECH of all relevant factors, it is determined that a new, independent company should be established to manufacture and market the instrument. Alternatively, UTECH may decide to sell or sub-license the technology, for cash and/or securities and royalties, if UTECH's criteria for a new, independent entity are not met. The business plan to accomplish this start-up calls for funding of $1.5 million ("venture" phase) of which $250,000 would be borrowed. The relatively low cost of "venture" funding in this case relates to the limited product line and the well-defined laboratory market. Because of the new instruments' advantages (speed, accuracy, lower cost,

versatility, etc.) and because of the patent position, it is projected that the new company will capture 7% of the total market at the end of three years. The profit margin during this period would be 15%.

D. Phase 4:

Based on the successful introduction and operation of the instruments, the new company can position itself to capture an additional 20% of the market. Funding requirements are $4.5 million to achieve these objectives.

2. Pro Forma Relationship Between RC and UTECH

RC presents the above-described technology to UTECH. UTECH reviews and subsequently negotiates a development/license agreement with RC on the following terms:

A. UTECH would fund $100,000 of research at the university under a six (6) months R&D contract to meet the objectives of Phase 1 ("pre-seed"). UTECH would obtain any "improvement inventions" made during this funded research.

B. UTECH would agree to pay RC a royalty of 7% on sales price to end-users, in the case of direct sales, and on price to distributors, who would, of necessity, be required to achieve the projected sales levels.

C. If UTECH is satisfied with the results of the "pre-seed" phase, it will be committed to spend an additional $300,000 over the next nine (9) months for development. If it elects not to proceed to such development ("seed" phase), all UTECH rights will terminate.

D. UTECH may elect to form a development subsidiary ("NewCo") for either the "seed" or "venture" phase, in which event it will issue to RC 10% of the initial shares of NewCo in lieu of an "up front" cash payment for the license option. The equity of RC would remain undiluted through investment of an aggregate of $400,000 in the technology. If UTECH elects to license an established company, rather than form NewCo, RC will receive 50% of any consideration received, in addition to its 7% royalty on sales. UTECH will have one (1) year to proceed with a plan of commercialization, after which it will be responsible for minimum royalties. If UTECH does not proceed with such a plan, rights will revert to RC, with some percentage of future profit flowing to UTECH to recover its "seed" investment in the event of commercialization by others.

E. In addition, RC will have the right to convert one-half of its royalties into an additional 10% of the shares of NewCo, provided that such election is made upon completion of the "seed" phase. Thereafter, RC may have the right, for some period to

exchange a determined amount of royalty flow into additional shares of NewCo. For purposes of this example, it is assumed that RC exercises the initial conversion option.

F. RC would grant UTECH a worldwide exclusive license to the technology, subject to the foregoing.

3. Financing Plan

A. UTECH will use its own funds to finance the $100,000 Phase 1 "pre-seed" cost. Assuming success, UTECH will proceed to form NewCo and to supply $300,000 of Phase 2 "seed" capital from its own resources. At the close of this phase, and before the "venture" Phase 3 - Financing, RC will exercise its option to convert one-half of future royalties into a 10% equity interest in NewCo. At this point, NewCo royalty payments to RC would be reduced to the 3.5% level, UTECH's gross investment in the technology would be $400,000 and the ownership of NewCo would be as follows:

RC	- 20%	(initial position plus royalty conversion)
NewCo Management	- 15%	(may be reserved but not issued if UTECH does not wish to commit itself to developing NewCo as an independent entity at this stage)
UTECH	- 65%	
TOTAL	100%	

B. Based on Phase 2 "seed" results, UTECH will proceed with a private round of "venture" financing. Because of the limited product line and well-defined laboratory market, UTECH estimates that production and marketing costs for the period prior to cash flow viability will be $1,500,000 (less than in the typical case). UTECH will arrange a $250,000 borrowing (equipment lease or the like) for NewCo, will invest $500,000 of its own funds and obtain $750,000 from new investors, who may include Limited Partners of UTECH. After this "venture" round of financing, ownership will be as follows:

RC	- 12.4%	
NewCo Management	- 9.3%	
UTECH	- 55.5%	(40.3% old plus 15.2% from new "venture" investment)
New Investors	- 22.8%	
TOTAL	100.0%	

C. Phase 3 goes according to plan. NewCo's sales at the end of three (3) years (four and one-half years from project inception) are $10 million and pre-tax profit is approximately $1,500,000. NewCo is paying a royalty to RC of $350,000 per year.

D. NewCo decides to expand operations (Phase 4) at a cost of $4.50 million gross, and goes to the public market to raise the necessary additional capital. It proposes to do this by offering $2.5 million in the form of common stock and $2 million in some form

of debt security with warrants or conversion features (it is assumed for purposes of the example that the warrants or conversion features would not be dilutive vis-a-vis savings in interest expense). In addition, UTECH, its Limited Partners and investors in the private round (2 above) participate in a secondary offering of common stock, combined with the initial public offering, in an aggregate amount of $1.5 million. Ownership of NewCo after the offering is as follows:

RC	- 9.9%
NewCo Management	- 7.5%
UTECH	- 44.4% **
Other Private Round Investors	- 18.2% **
Public Investors	- 20.0%
TOTAL	100.0%

** No adjustment for secondary sale of stock.

NOTE: No Reserve for Warrants or Conversions because they would not be dilutive.

E. Two years after the public offering (6.5 years from project inception) NewCo achieves additional market penetration in an expanded market, its sales are $37.5 million and its pre-tax profit is $5.6 million. NewCo is also paying a royalty to RC of $1,312,500 annually. If all the above were to occur, NewCo's stock would most likely be selling at fifteen times net earnings.

4. Financial Results

Based on the foregoing, we can identify the following gains to all parties:

NOTE: RC is obligated to share its position in NewCo with the university/inventor on a 60/40 basis. Thus, RC would be receiving $525,000 per year from NewCo in royalties and the university/inventor would be receiving $787,500 per year in royalties.

	Cash Investment	Ownership	Value of Equity, Assuming a Market Value of 15 Times after Tax Earnings
University/Inventor	$ -0-	5.9%	$ 2,478,000
RC	-0-	4.0%	1,680,000 *
NewCo Management	-0-	7.5%	3,165,100
UTECH	900,000	44.4%	18,633,000 +
Other Private Round Investors	750,000	18.2%	7,644,000 +
Public	2,500,000	20.0%	8,400,000
	$3,350,000	100.0%	$42,000,000

* The Special Grants Fund will receive 3.6% ($670,788) of UTECH's net long-term profit.

\+ Less any shares sold in secondary offering at time of public offering (see 4 above).

At this point in time, that is 6.5 years from inception, the options for owners of NewCo might include: "dribbling out" shares under Rule 144; selling or merging NewCo to or with a larger corporation, for stock or cash; initiating an "in-house" R&D program to develop products that would be related, at least by marketing -- recognizing the negative effects of such a program on reportable income; or purchase of new product lines from third parties, including UTECH, for stock or cash. These alternatives would also apply at earlier stages, but it is believed that the value of NewCo may be maximum somewhere between the third and fifth years of operations because of product uniqueness, "catch-up" time required by competitors, which may not yet have impacted fully, and present value principles, which may become negative as growth rates decline or plateau.

UTECH

Advisory Committee Candidates

1. Stephen Atkinson - Executive Secretary - Committee on Patents and Copyrights; Harvard University
2. Howard Bremer - Patent Counsel; Wisconsin Alumni Research Foundation (WARF)
3. Thomas Calhoun - First Vice President; E.F. Hutton
4. Roger Ditzel - Director - Patent, Copyright and Trademark Office; University of California Systems; and President of Society of University Patent Administrators (SUPA)
5. George Dummer - Director - Office of Sponsored Programs; MIT
6. Donald Langenberg - Chancellor; University of Illinois
7. Edward MacCordy - Vice Chancellor for Research; Washington University; and President of National Council of Research Administrators (NUCRA)
8. L. W. Miles - Chairman; University Patents, Inc.
9. Niels Reimers - Director - Technology Licensing; Stanford University
10. John Schaefer - President; Research Corporation

A PROPOSAL TO

THE DEPARTMENT OF COMMERCE

FOR SUPPORT OF A

PROGRAM TO ENHANCE THE COMMERCIALIZATION

OF UNIVERSITY TECHNOLOGY

SUBMITTED BY: Research Corporation
6840 E. Broadway Boulevard
Tucson, Arizona 85710

Requested Starting Date:	June 1, 1983
Funding Requested:	$182,615.00
Duration of Program:	18 Months
Date Submitted:	April 25, 1983

PRINCIPAL INVESTIGATOR:

GEORGE M. STABLER, Executive
Vice President

PROGRAM DIRECTOR:

DR. DONALD M. COYNE, Associate

APPROVED:

DR. JOHN P. SCHAEFER, President

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OBJECTIVES

The primary purpose of this program is to establish a basis for Cooperative Agreement between Research Corporation ("RC") and the Department of Commerce ("DOC"). The underlying goal of the Cooperative Agreement would be to increase U.S. competitiveness and productivity by taking full advantage of the basic research structure in American universities and our national laboratories.

Some specific areas of mutual interest are:

1. Enhanced patent awareness and commercialization alternatives for educational institutions and the national laboratories;

2. Earlier and more widespread identification of inventive concepts resulting from government supported research;

3. Expanding the array of commercialization techniques available to handle basic technology to include "non-traditional" transfer modes like research and development limited partnerships ("RDLP's"), venture capital, joint venture, new company start-ups, etc.;

4. Help in "bridging the gap" and thus facilitating university-industry collaboration;

5. Initiate and coordinate commercialization activities between universities and national laboratories and their local/regional small and medium-sized businesses;

6. Establish a basis for a "facilitator" (RC) in helping universities and the national laboratories implement the above-mentioned activities;

7. Help in developing well-trained university and national laboratory patent administrators and provide them with the proper support and back-up needed to run successful technology commercialization programs;

8. Demonstrate the "facilitator" role through an initial Pilot Project with a test group or research universities;

9. Plan and organize regional and/or national seminars based upon the above-mentioned Pilot Project for universities and national laboratory patent administrators;

10. Establish an Institute which would be used for continual training, commercialization skill enhancement, and as a dialog for parties interested in facilitating university-industry research and commercialization relationships;

11. Systemize regional small business and regional economic development networks so as to accelerate the "time to market" of university and national laboratory-developed products, processes and services;

12. Arrange a forum so that members of the brokerage/investment community can interact with organizations and/or individuals responsible for structuring RDLP's in order that acceptable sales terms and conditions could be negotiated and structural RDLP formats standardized (this kind of understanding would not only expedite the RDLP process but would also reduce costs to both parties); and

13. Establish an Operational Center(s) where university and national laboratory patent administrators (and also small businesses) could get proper advice (consultation) on the use of RDLP's and other "non-traditional" commercialization options and, in addition, have RDLP completely structured and marketed.

BACKGROUND

In December of 1977 RC completed a three-year study for the National Science Foundation ("NSF") and the National Bureau of Standards ("NBS"). The study was aimed at developing and testing procedures to enhance the patent awareness of academic researchers.

The results of this program were very positive as reflected by the large increase in the number of invention disclosures that were stimulated. A manual was produced based on the RC developed procedures for stimulating invention disclosures with the intent of this manual being used as a guide for university administrators who wish to set up in-house patent programs. (Both the initial proposal and the resulting manual are attached as Appendix 1.)

Unfortunately, the NSF program was neither expanded to other universities nor was a mechanism established which could be used to provide continual training and the enhancement of commercialization skills for the university patent administrator. As a result, procedures for invention stimulation were available but proper training in their use and periodic commercialization skill updating were taken for granted. Further, the necessary knowledge-base for the evaluation of disclosures for their patentability and marketability, the filing of prosecution patent applications and the licensing (commercialization) of issued patents were not treated by the NSF program and, thus, were not generally available to most university patent administrators.

RC's proposed Cooperative Agreement with the DOC has been designed to take advantage of the proven procedures for stimulating invention disclosure established during the NSF program and the lessons learned from the problems that have developed since the completion of the program.

Technological advancement is the key to our nation's sustained economic growth. Our universities represent the basic research establishment from which will come the intellectual seed for new industrial technology which will help stimulate our economic growth. We must implement a program that will help maximize our ability to identify inventions resulting from basic research so that these inventions can be made widely and promptly available for this purpose.

PURPOSE OF THE PROPOSAL

As an initial step, in our proposed Cooperative Agreement with DOC, RC plans to initiate a "Pilot Project" with a selected group of universities. The Pilot Project is designed to demonstrate the effectiveness of a "facilitator" (RC) and to help establish effective campus patent administration in order to encourage the early identification of new ideas with commercialization potential and to expand the array of available commercialization mechanisms to include "non-traditional" approaches such as RDLP's.

Further, it is RC's intention that the experiences gained during the Pilot Project would be extended to an expanded group of universities, the national laboratories and interested small businesses. By providing both awareness and the means for early commercialization, it is hoped that the Pilot Project can contribute to increasing U.S. competitiveness and productivity.

APPROACH

RC in cooperation with DOC will select ten major research universities for inclusion in this Pilot Project. The group will be a representative cross section of this nation's university, health science and medical schools and technology institutes so that various awareness, early invention identification techniques, and "traditional and non-traditional" commercialization approaches can be attempted and evaluated. Several institutions meeting these criteria have already been contacted by RC and they have expressed a desire to participate in this initial Pilot Project.

RC will design programs to meet the specific needs of each participating university that will greatly extend any present internal patent management program that the universities may have. RC will work with the selected university administrator who is responsible for patenting and licensing. This individual(s) will play an integral role in tailoring an enhanced program that will include: patent awareness for faculty, early invention identification, on-campus assistance, regular communication with faculty members, help in attracting industrial research support, and technology commercialization through "traditional" and "non-traditional" transfer approaches.

The activities undertaken by RC will include:

1. A Training Seminar for university patent administrators.

2. A specially designed patent-awareness program for faculty.

3. On-campus representation for regular meetings with faculty members to discuss questions concerning technology, commercialization and to help university patent administrators establish the one-to-one contact necessary for early invention identification.

4. Provide written reports for guidance on all submitted disclosures.

5. Use flexible methods to achieve development and commercialization of university inventions.

6. Undertake international commercialization and transfer of university technologies with the intention of positively affecting the U.S. balance of trade.

7. Help in attracting support for those research initiatives which appear to have commercial potential.

8. Create a better interface for the transfer of technology to local and regional businesses which are in close proximity to the participating universities.

A more complete description of these efforts can be found in Appendix 2 which contains the document entitled Complete Patent Management - A New Option Under Research Corporation's Invention Administration program.

A key objective to this overall process will be to establish an effective patent focus (administrator) at each of the participating universities and to provide the individual with the proper back-up needed to operate an effective technology commercialization program.

It is anticipated that the Pilot Project will be implemented over an eighteen-month period and will contain at least the following tasks:

1. Initial meetings involving RC, DOC and university administrative personnel to explain the basis of the Pilot Project, define its goals and objectives, and to implement a preliminary research review of the participating universities.

2. Preparation of awareness, early invention identification, and training seminar materials and procedures.

3. Conduct an initial awareness/training seminar for the selected university patent administrators.

4. Provide continuing on-campus support for the university patent administrators and help them interface better with their faculty inventors.

5. Identification of technologies that lend themselves to development and commercialization through RDLP's.

6. Preparation of a final report/working manual summarizing and evaluating the Pilot Project's procedures.

ADDITIONAL/FUTURE ACTIVITIES

RC is convinced that by helping to build a strong university focus (Patent Administrators) and providing continual means of education and commercialization skill enhancement a sound base will be established so that maximum use of America's basic research structure is realized. Thus, it is our intention to build on the experiences gained during the Pilot Project and to expand the use of these procedures with other universities, our national laboratories and interested small and medium-sized businesses. In addition, RC and DOC would simultaneously evaluate the merits of:

1. Planning and organizing a national workshop/seminar based on the experiences gained during the Pilot Project for other university and national laboratory patent administrators.

2. The establishment of an Institute which would provide a continual training base for patent administrators as well as a center for seminars aimed at stimulating dialog between parties interested in facilitating university-industry research and commercialization relationships.

3. Systemizing regional small businesses and regional economic development networks so as to accelerate the "time to market" of university developed products, processes and services for the benefit of these local businesses.

4. The establishment of an Operational Center where university and national laboratory patent administrators (and interested small businesses) could get proper advice and/or help in structuring and marketing RDLP's and other "non-traditional" commercialization approaches.

SIGNIFICANCE

Broadly, it is RC's premise that the enhancement of patent awareness, early invention identification and the use of "traditional" and "non-traditional" commercialization techniques at educational and scientific institutions (and small businesses) will result in the following:

1. The country as a whole will obtain a higher return on this nations research investment. As new products and processes reach the marketplace, new enterprises develop providing increases in employment and tax revenue. Research funding must be analyzed and mined for the inventions that our funding has generated so that a maximum national benefit may be obtained.

2. Help local and regional industry become involved with university and national laboratory technologies and more fully utilize this inherent reservoir of technical talent to help them solve their own problems and meet their future challenges.

3. Retention of foreign patent rights through early identification and evaluation of inventions before publication. All to often these rights are lost by premature public disclosure. Foreign patents can enhance the inflow of dollars both to the U.S. patent holder in the form of royalty income as well as to the U.S. corporate licensee as profits and sales.

4. Improvement in the quality of life as a consequence of an increased number of inventions resulting from government sponsored basic research in the health and medical science field. Such inventions all to frequently lie fallow at present because medical researchers do not have an appreciation for the use of the patent system and feel their responsibility ends with publications of their research findings.

5. Provide feedback information which can be used as criteria in future programs for funding basic research. Those institutions and research workers which are most likely to produce the highest quality results will be more readily identified. In addition, the institutions and researchers will become more aware of the uses to which their work can be put for greater public benefit.

The Pilot Project which is proposed here is designed to accomplish at minimum the following:

1. Develop an awareness that inventions of value to the public may be inherent in academic research projects.

2. Define in general terms the factors that make an invention both patentable and marketable.

3. Develop an understanding that publishing and patenting are compatible and not irreconcilable opposites as is frequently felt to be the case by many academic researchers.

4. Presentation of the role of the patent system in developing new products and processes for the public benefit.

5. Provision for testing various methods ("non-traditional") other than patents for commercializing university technologies.

6. Encouragement of a closer working relationship between university patent administrators and faculty researchers through the development of the knowledge and understanding of the university's patent policy and administrative procedures and responsibilities.

7. Development of a broader understanding of commercialization methods through presentation of actual case histories, including economic and other benefits accruing to the general public, the government, the university and the inventors.

8. Development of appropriate and more effective mechanisms for stimulating and identifying early inventive concepts.

9. Development of appropriate and more effective mechanisms for evaluating inventive concepts resulting from universities.

RESOURCES REQUIRED

Support of the Pilot Project is dependent upon obtaining two commitments: direct grant support from the federal government to help RC defer some of the costs associated with the Pilot Project and, secondly, the direct and continued participation of certain DOC employees in the Pilot Project.

Cost estimates and Budget for the necessary direct grant to RC are outlined below:

Personnel Costs

Overall costs for the Pilot Project are based on the following hourly manpower changes for RC personnel:

Supervisory Personnel	$75.00
Associates	$50.00
Support Staff (secretarial)	$18.00

These hourly rates are inclusive of direct labor, overhead and general and administrative expense. Since RC is a non-taxable, non-profit foundation, there is no allowance for either profit or a management fee in these rates.

Costs for Travel to Institutions and/or the Seminar Site

These costs have been estimated and averaged based on one professional traveling from (or to) Tucson, Arizona on a per diem basis.

Air Fare	$600.00
Motel	65.00
Meals	35.00
Misc. (Ground Transporation)	50.00
TOTAL	$750.00

These hourly rates are inclusive of direct labor, overhead

Cost of Pilot Project

The following costs are estimated for the performance of the Pilot Project at ten selected universities.

1. Initial meetings involving RC, DOC and high level university administrative personnel in order to explain the basis of the Pilot Project, define goals and objectives and to begin a preliminary University Research Review:

Average two-day travel	$ 900.00
Institutional Visit (10 hrs. @ $50)	500.00
Study and Analysis of Data (4 hrs. @ $50)	200.00
Support Staff (6 hrs. @ $18)	108.00
TOTAL	1,608.00
Total for Ten University Trips:	$16,080.00

2. Preparation of awareness, early invention identification, and training seminar materials and procedures:

Supervising Personnel (25 hrs. @ $75)	1,875.00
Associate (200 hrs. @ $50)	10,000.00
Support Staff (100 hrs. @ $18)	1,800.00
Preparation of visual aids	1,000.00
Handout material	3,000.00
TOTAL	$17,675.00

3. Initial awareness and training seminar for the selected university patent administrators (to Tucson Seminar Site):

Average three-day travel	$ 1,050.00
Rental of conference Center	150.00
TOTAL	$ 1,200.00
Sub-total for ten university (two representatives per university)	$24,000.00

Supervising associates (20 hrs. @ $75)	$ 1,500.00
Associate (80 hrs. @ $50)	4,000.00
Support staff (40 hrs. @ $18)	720.00
Miscellaneous meeting expenses and professional stipends	7,500.00
Sub-total	14,720.00
TOTAL	$38,720.00

4. Provide continuing on-campus support for university patent administrators and for interface with university faculty inventors:

(Approximately 20 days will be scheduled for "on-campus" interface at each participating university over the course of the Pilot Project -- assuming an average of four, five-day trips per university.)

Average five-day travel	1,350.00
Institutional visit	
Associate (20 hrs. @ $50)	1,000.00
Support Staff (10 hrs. @ $18)	180.00
Sub-total	$ 2,530.00
Total of four, five-day trips per 10 universities	$101,200.00

5. Preparation of a final report/working manual which would summarize the Pilot Project:

Supervising Associate (20 hrs. @ $75)	1,500.00
Associate (80 hrs. @ $50)	4,000.00
Support staff (80 hrs. @ $18)	1,440.00
Miscellaneous	2,000.00
TOTAL	$ 8,940.00

Institutional visit

Summary of total Pilot Project costs:

Initial meetings	$ 16,080.00
Preparation of materials	17,675.00
Training seminar	38,720.00
Continuing campus support	101,200.00
Final Report	8,940.00
	$182,615.00

As previously mentioned, in addition to the direct grant support, the involvement of certain DOC personnel would also be necessary to meet all of the objectives of this first step in the envisioned Cooperative Agreement.

Further, RC will be cost sharing expenses for the programs that go beyond those which have been requested. RC will assume all costs involved in technology evaluation, patenting, licensing, license management and foreign filing as per our normal Complete Patent Management Agreement with universities.

TIMING

RC believes that an 18-month Pilot Project would provide sufficient time for the purpose of training and gathering sufficient data for evaluation. Further, because of the various cycles of activity associated with the academic year, an early June 1983 starting date would be most desirable.

RC and DOC personnel would use the time period between June and September of 1983 to prepare the awareness and training seminar materials and, in addition would conduct the initial university visits and planning/review meetings with participating university administrators. The awareness and training seminars would be scheduled for September with the follow-up "on-campus" support effort being scheduled at appropriate intervals over the next 12 months.

If the above schedule could be met, RC would then attempt to have a final report available for distribution to other universities, government laboratories, and interested small businesses by the end of 1984.

Timing the Pilot Project to begin in June of 1983 would also permit RC and DOC to explore the possibility of initiating other projects associated with the Cooperative Agreement in parallel with the Pilot Project.

INFORMATION ABOUT RESEARCH CORPORATION

Research Corporation was founded in 1912 by Frederick Gardner Cottrell, a professor of physical chemistry at the University of California at Berkeley, the inventor of the electrostatic precipitator. Cottrell's goal, in essence, was to make practical use of discoveries resulting from university research and to apply resources thus generated to further the advancement of science. RC is incorporated in New York State under the not-for-profit corporate law, and has offices in New York City and Tucson, Arizona.

RC's first objective is carried out through the Invention Administration Program, which evaluates inventions made at scientific and educational institutions. RC has servicing agreements with over 280 universities and non-profit institutions to handle their inventions and research projects that show commercial potential. These agreements generally provide for the division of income on a basis of sixty percent to the university and inventor and forty percent to RC.

Its patent services to universities include the location and identification of technology concepts, and the evaluation of the economic feasibility of such concepts, the prosecution of applications for patents have not already been obtained, and licensing and administering the patents. RC generally does not engage in research, development, manufacturing or product marketing activities but intends that such activities be undertaken by its licensees. The major product and process areas of RC's technology are medical-pharmaceutical, agricultural, animal health, chemicals, energy and electronics. RC evaluates on average 400 disclosures each year of which it accepts for handling approximately 10 percent. RC currently administers about 500 active inventions and 200 licensed inventions. Royalties generated from these technologies will reach the $10 million per year level in 1983.

The advancement of science, RC's second objective, is carried out through grants-in-aid for basic research in the natural and physical sciences. Through these programs RC assists significant research proposals by faculty members at colleges and universities throughout the U.S. and Canada. These programs aim at young university researchers because they are yet unknown as established researchers, and generally cannot successfully compete for Federal funds. Most of RC's grantees, after completing initial projects under its patronage, are able to win Federal money for further projects. Approximately 300 research grants are awarded each year.

Among members of the science and technology community who have conducted research under grants from RC are 17 Nobel Prize winners. The distinguished scientists, whose first research grants were awarded to them by RC, include the five chemists (Herbert C. Brown, George Wittig, Robert B. Woodward, Manfred Eigen and William N. Lipscomb, Jr.), five physicists (Ernest O. Lawrence, Isdor I. Rabi, Felix Bloch, Edward M. Purcell and Robert Hofstadter) and seven medical researchers (Edward C. Kendall, Edward L. Tatum, Severo Ochoa, Feodor Lynen, George Wald, Robert W. Holley and Max Delbruck).

RC has a professional staff of twenty-five scientists, engineers, technology transfer/marketing specialists, patent attorneys and new venture experts. It also retains several business/scientific consultants and legal firms in the areas of patent, tax, and corporate law.