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CASE WESTERN RESERVE UNIVERSITY · CLEVELAND, OHIO 44106

PATENT BRANCH, OGC
DHEW

JUN 21 1976

June 15, 1976

Mr. Norman J. Latker
Office of General Counsel
Department of Health, Education
and Welfare
Westwood Building, Room 5A03A
5333 Westbard Avenue
Bethesda, Maryland 20014

Dear Norm:

I have enclosed for your review a draft of a letter I intend to send to Research Corporation. Any comments (criticisms, additions, subtractions, etc.) you can offer will be greatly appreciated.

After you have had an opportunity to digest this mishmash, please call me so that I can utilize the benefits of your experience and insights in the drafting of a final letter. My phone number is (216) 368-4510.

Thank you.

Sincerely,

George M. Stadler
Assistant Director
Research Administration

GMS:bk

Enclosure

DRAFT

Dr. Willard Marcy
Vice President - Patent Program
Research Corporation
405 Lexington Avenue
New York, New York 10017

Dear Dr. Marcy:

This letter is being used as a vehicle for the organization of my thoughts and reactions concerning the NSF-supported Patent Awareness Program and where it might lead. You will perhaps take exception to many of the principles I intend to set forth, but I hope this rehash of ideas can serve as a point of departure for future discussions aimed at formalizing a program that might better utilize the results of federally-funded research on university campuses.

First, I must state that I totally concur with and can find support on our campus for the thesis you offer in your NSF proposal: "The development of an enhanced patent awareness at educational institutions is expected to lead to both an early and more widespread identification of inventive concepts resulting from sponsored research, and a better understanding of the means available to bring these concepts to commercial utilization for the benefit of the public." We initiated our own patent awareness program in January of 1975 in hopes of increasing the disclosure rate at Case Western Reserve University. We soon found that the success of this program hinged on two points, the decentralization of our efforts and the establishment of credibility in the eyes of faculty inventors. We had to become involved with the academic researcher's interests; this meant going to his lab, rather than waiting for him to come to our office. In addition, we had to develop a better understanding of his needs, desires, and motivations for participating in the patent process. Finally, we had to establish our credibility, and this could only be accomplished by providing a competent service. These efforts coupled with and modified to a large extent by your patent awareness program have succeeded in producing some rather exciting results.

As you undoubtedly know, the mere increasing of the disclosure rate is only the start, for if one desires to maintain or even foster a growth in faculty awareness of patents and licensing, one must provide a mechanism for adequately handling the resulting disclosed invention. Therefore, a technology transfer mechanism which offers the inventor alternatives must be simultaneously developed. It is at this juncture that we are generally faced with two alternatives: (1) the establishment of an active patent office on campus, or (2) the utilization of the services of a licensing corporation such as Research Corporation. However neither of these two alternatives really provides an adequate solution to the problem of establishing an "effective" technology transfer mechanism. Once an awareness program has been started and all the resulting activities are then turned over to Research Corporation, in our opinion, the faculty would soon lose confidence in the credibility of the transfer mechanism, since such a small percentage of invention disclosures are accepted for licensing. In addition, it is likely that a

university patent administrator would eventually lose interest in the activity. On the other hand, to establish a patent office on every campus is even less desirable for the following reasons: (1) the cost of operation of such an activity would not necessarily justify the results in most cases, and (2) the activity at several schools can actually be handled more efficiently and effectively by one "professional" working full-time in the area, rather than by having several people with varying degrees of experience at several schools putting a quarter- to half-effort into the process.

Here, as I see it, is the real crux of the technology transfer problem: the establishment of an effective transfer mechanism. There is no question that the disclosure rate can be increased by the methods you have outlined and implemented in the present NSF program. Your evaluation data will more than support this thesis. But the underlying principle to the success of the NSF program is worth emphasizing: it is due, in effect, to your "decentralization," your becoming directly involved not only with the university, but with the inventor himself. The lecture/seminar approach seems to provide the forum necessary for clarifying issues and refuting misconceptions held by faculty members concerning patents. These seminars when coupled with individual follow-up visits create the environment necessary for the interchange of ideas which invariably leads to the generation of an awareness of patents as an additional (not a substitute) means to disseminate knowledge with the added benefit of providing the vehicle necessary to move technology out of the laboratory. But there remains a missing link: the competent service necessary for completing the cycle and providing the momentum needed to keep the game moving. It is at this juncture that I would like to see Research Corporation again playing a leadership role, rather than merely assuming the posture of the middle man. Research Corporation could assume the initiative and provide the necessary services (an effective transfer mechanism) for the university community.

An effective transfer mechanism, as far as we are concerned, must provide at least the following eight services:

1. The mechanism must primarily fulfill the needs of the inventor. It must provide him with alternatives in addition to providing him with both constructive and prescriptive advice if his technology appears to be unlicensible.

2. The mechanism must provide the university community on the whole with the means to understand the economics and problems inherent in commercialization, and must emphasize the importance of the patent as the vehicle necessary for the industrial interface.

3. The mechanism must be cost-effective, not only for the university, but also for Research Corporation and for any other organization which is involved.

4. The mechanism must provide in-service program development and direct consultation for university patent administrators.

5. The mechanism should provide a "professional evaluation" of the technology by a person who sees more than just ten or fifteen disclosures in a specific area in the course of his career, but rather by an individual who has the opportunity to see up to 100 disclosures in a specific area per year.

6. The mechanism should provide for the widest possible dissemination of the university's technology. Industry should be made aware of developments or work in their areas of interest. In addition, it should be emphasized that license agreements are but only one means to transfer university technology. Universities are interested in developing contacts for possible joint ventures, research contracts, fellowships, consulting agreements for its faculty, etc. All of these latter interaction modes serve the purposes of the university and may also contribute ultimately to the transfer process.

7. The mechanism should provide government agencies with an effective means for communicating with universities on policy and regulations pertinent to patents. In addition, it should provide for the representation of the university's interests in the legislative process by taking an active position with regard to the legislation's formation, passage, and implementation.

8. Finally, the mechanism should provide insights for the university in helping to establish an industrial interface. It should provide guidance in the negotiation of industrial research contracts, secrecy agreements, etc.

The transfer mechanism I would propose can meet all of the above objectives. The key to its ultimate success lies in decentralization. I feel the reason why both of our awareness programs have been successful is due in part to our interaction with the faculty, our becoming more involved with their research, and our becoming more "visible" as a means for handling patents. Research Corporation should consider this same type of approach on a wider scale. If it were decentralized, it could provide the same services it presently provides, but could, in addition, serve as a focal point for providing many additional services to the university community. The decentralization process I refer to above can be accomplished through the direct cooperation of two organizations: (1) Research Corporation and (2) DHEW (Norm Latker's office), and the possible (or optional) support of two additional organizations: (1) Dr. Dvorkovitz, and (2) host universities.

Role of Research Corporation

The United States could be divided into six regions: one or two members from the present Research Corporation staff would establish an office in a major city in each of these regions (an alternative would be the establishment of a regional office at an identified host university in each of the six regions). The Research Corporation representative would act as a coordinator for the region. He would identify a direct contact on each campus in his region and provide a "visible" link to New York. He could also provide the expertise needed for in-service patent awareness program

development on each campus (these programs would be similar to the present patent awareness program - see Enclosure A), and serve as a consultant to all universities in his region, attempting to increase their disclosure rates. He could also provide material for a credit seminar course for graduate and undergraduate students about the patent system and technology transfer. He could be a focal point for government policy and regulation questions concerning patents, serving as a communications link in the government-university interface. Further, he could be a sounding board for the region's interests as they relate to the legislative process and function in a quasi-active lobbying role. He would consult with universities about their interactions with industry, and drawing on his wealth of experience, suggest both traditional and non-traditional alternatives to aid in the transfer of technology. Finally, he would function in his present patent evaluation mode within Research Corporation to provide the results of both patentability and marketability studies.

Role of DHEW

One can easily deduce by reading the recommendations found in the report of the University Patent Policy Ad hoc Subcommittee on Governmental Patent Policy (July 1975) that the committee would like to see the university transfer capabilities encouraged (Page 12). This report has recommended the adoption of a policy that qualified universities may retain title to inventions under a general institutional patent agreement (Page 18). The term "qualified university" refers to those universities which have a "strong patent management capability to transfer university technology." Thus the type of program which is suggested might provide the necessary momentum to bring the legislative process on this issue to a positive conclusion. In addition, it would demonstrate to Congress and to the public that Research Corporation has an acute awareness of the problems involved in moving technology developed under the present annual 3.1 billion dollars of federal university research and development funds into the marketplace.

The DHEW (or a consortium of government agencies) could provide the initial funds necessary for the program's implementation. A proposal for funding could be broken down to cover expenses in three major areas: (1) decentralization, (2) generation and implementation of an awareness program, and (3) evaluation alternatives. (A proposed budget for these three areas can be found in Enclosure B.)

Role of Dr. Dvorkovitz & Associates (Optional)

Although the role of Dr. Dvorkovitz & Associates is indicated as being an optional component to the program, its inclusion could provide the university with some real advantages. This company would serve as a communications link of the organization. The region would input its disclosures into its data bank. The disclosures could then be channeled to the regional director, who is the present identified "expert" in the identified field of the technology for evaluation. An abstract of the disclosure would also simultaneously be sent to industry as an indication of the university's interest in a particular field, and would indicate to industry the possibility of invention existing in that particular area. This method may provide and stimulate a variety of interaction modes in addition to the present licensing mode. The mechanism

would provide a means for the interchange of ideas which may be of help to both industry and the university. These interfaces at different levels of development can lead to important relationships.

The Dvorkovitz communication link would also provide government agencies with improved means to ensure that the technology being developed is being disseminated to the largest possible base at all levels of the technology's development.

Role of the University (Optional)

Again, the role of the "host university" is labeled as optional. Yet the decentralization process could be best accomplished if the regional offices were established on university campuses rather than in office buildings which are removed from the realities of the academic world. The host university would provide free office space in return for the coordination of its patent programs on its campuses. (The Research Corporation representative would work more specifically in conjunction with a university employee who is designated for handling the patent activity of the host university on a half-time or quarter-time basis.) This type of mechanism would be the most cost-effective way to implement and sustain the program during its evaluative period.

Research Corporation would need to reexamine its structural organization. The New York headquarters could remain as the coordination center, housing the present grant program and licensing activity, and could still be the coordination point for the patent evaluation program. Some members of the present staff would remain in New York, while the other associates would be decentralized to coordinate the various regions. The regions might possibly look like this:

Northeast	South	Midwest	Central	Northwest	Southwest
Conn.	Fla.	Ohio	Miss.	Alaska	Hawaii
Maine	Ga.	Wisc.	Alabama	Oregon	California
Mass.	La.	N.D.	Arkansas	Wash.	Nevada
N.H.	N.C.	S.D.	Texas	Montana	N.M.
R.I.	S.C.	Michigan	Oklahoma	Idaho	Arizona
Vermont	P.R.	Minnesota	Missouri	Wyoming	
Delaware	Tenn.	Indiana	Iowa	Utah	
D.C.	Ky.	Illinois	Kansas	Colorado	
Maryland	Va.	Nebraska			
N.J.					
N.Y.					
Pa.					
W. Va.					
Possible Host Institution: Boston University	S.C.U.	C.W.R.U.	Washington University	University of Oregon	University of Arizona

The final and perhaps most important component would be that Research Corporation could provide more alternatives in their evaluation and handling of university-oriented disclosures. Therefore, I propose three acceptance mechanisms for consideration:

(1) Mode A: The present patent acceptance program, where Research Corporation would continue to accept for patenting and licensing about 5% of the inventions disclosed to them.

(2) Mode B: The defensive publication program, where an additional 20% of the disclosures could be accepted by Research Corporation for handling. This mode would be used as an "alternative" to a rejection based on the evaluation of Mode A. Inventions which are on the borderline or inventions which have unusual promise but no present market, or inventions which would be beneficial to mankind but in fact would never have a very large market could be accepted in this mode.

It should be kept in mind that in most universities if a disclosure isn't accepted by Research Corporation or another licensing corporation, the inventive concept will be published and all future patent rights lost in addition to the benefits the public might gain if the technology were patented and transfered. Many times inventions evaluated by Research Corporation aren't quite ready for the market, or the market isn't quite ready for them. This usually means the invention will not be developed and marketed in the future if some action isn't taken. We have worked out an arrangement with two local patent firms to write "defensive" patent applications for between $300 and $750 depending upon the technology and the scope of protection we desire. This gives us at least six months to license the technology outright, at which time we could write a continuation or continuation-in-part application at no increase in normal patent cost. If we can't license the technology in the six-month period, we can convert the application to a defensive publication, whereby we will at least protect U.S. rights for an additional 30-month period.

If this alternative is properly explained to the faculty inventor, he views it as a mechanism of perhaps getting "some utility" in the future out of his technology. This is much better than the complete rejection of the technology. Besides, if a mechanism like this were utilized by Research Corporation, its acceptance rate could be increased up to 25% and it would only cost an additional $50,000 based on our filing fees and your 1975 disclosure figures. This additional capital outlay by Research Corporation would be greatly overshadowed by the amount of credibility it would gain in the eyes of the university faculty member. Further, this type of mechanism would work especially well in attempting to license mechanical or electrical inventions where your present acceptance rate,

according to my understanding, is much lower than the stated 5% figure.

(3) Mode C: The secrecy agreement program. This program would operate on the negotiation of a revolving disclosure agreement with companies representing several basic areas of technology. (This process would closely resemble the screening agreement the corporation presently has for the evaluation of pharmaceuticals and chemicals.) The companies would review the technology for possible licensing and agree to a five-year period of secrecy based on the disclosure of the inventive concept. After the evaluation they would provide Research Corporation with the report summarizing their view of the state of the art in which the invention falls and the market as it pertains to their organization. At least another 30-50% of the disclosures (again, especially in the mechanical and electrical areas) could be accepted under this type of program. We have negotiated several of these review mechanisms, and have found that the inventors are quite willing to accept them as a last resort or as an alternative to complete rejection.

Mode C would again be used as an "alternative" to rejection by Research Corporation under Modes A and B. The advantages would be that almost all disclosures could be accepted and the faculty inventor would see (by the industrial reports) that his invention is being given serious consideration by industry. If the reports of several companies are negative and the technology appears unlicensable under Mode C, then the impact of the rejection of his technology would again not be coming from Research Corporation, but from the marketplace itself. The inventor wouldn't be able to directly "blame" Research Corporation for the failure of his technology's entrance into the marketplace. He would have to conclude that the market is the culprit. Thus, with this feedback (prescriptive advice) he could, if he chooses, design his own alternative to introduce his technology.

These three modes, coupled with the Dr. Dvorkovitz data base, would provide every reported university invention with a complete range of exposure techniques in an attempt to address all possible alternatives for transfering the technology. It would showcase the university technology in all stages of its development and provide industry with a variety of alternatives to interface with the university. This two-way street could result in a more productive utilization of government research dollars by maximizing the possible avenues to transfer the fruits of scientific investigation.

Finally, I would like to address the difficult question of implementation. The ideas presented have centered around three concepts: decentralization, awareness, transfer mechanism. If one truly desires to provide a complete service for the university community, the question of decentralization should be given serious consideration. It provides the important one-to-one

relationship necessary for the effective and continual operation of the awareness and transfer phase of the program. In addition, it provides the momentum necessary for its continued success. Unfortunately, to decentralize one's organization would probably mean some very hard decisions concerning policy, and since time is of importance due to a variety of present legislations, a decision perhaps on a short-term approach could be considered. A short-term approach would involve patent awareness and increasing alternatives in the evaluative mode. This would mean expanding your scope with respect to generating patent awareness and adding to the present evaluation system the alternatives I have suggested. But if you modify the approach which has been outlined, you lose the vital spirit of the program which of course is commitment.

To summarize,

Thesis:

1. The disclosure rate can be increased through a patent awareness program, but if the program is to have any longlasting effect, it must be coupled with a long term technology transfer mechanism which is beneficial to the faculty inventor.

2. Research Corporation, in conjunction with the DHEW, could provide such a transfer mechanism as stated in (1) above for about 95% of all U.S. and Canadian universities without adversely affecting its present patent evaluation program in either quality or cost.

3. The key to the success of a university transfer mechanism is decentralization of staff and the providing of alternatives to the present patent evaluation program which Research Corporation administers.

Organization and Obligation:

1. Research Corporation could become the visible, regional coordinator for campus activity. It could provide the expertise to coordinate the region's services and carry on with present evaluation and the proposed alternative evaluation mechanisms. This would mean decentralizing from one to two associate directors to a particular region.

2. The government agencies would provide the initial funding necessary to set up the program. More specifically, they would provide the funds necessary to set up the awareness program on university campuses in each of the regions, decentralize, and provide for alternative evaluation modes.

3. (Optional) Dr. Dvorkovitz and Associates would provide the necessary communication link for Research Corporation and also provide universities with two mechanisms for getting into data bank: (a) a brief disclosure abstract of research activity, and (b) the present invention disclosure form which solicits a licensee for the invention.

4. (Optional) Host universities would provide office space in return for more specific services from Research Corporation associate directors.

5. Other universities in the region would identify a university contact for patent reporting and coordination on their campuses. This would close the communication link.

Services: The transfer mechanism would provide:

1. A visible link for university technology transfer.

2. Coordination of patent awareness programs on various regional campuses primarily through the identification of a university patent coordinator.

3. Associate director would function as a consultant in the university's attempt to identify patentable technology.

4. Provide materials for the development of a patent seminar course for undergraduate and graduate students.

5. Become an interface for government and university interactions on policy, legislation, and implementation.

6. Become a consultant to help foster, facilitate, and stimulate industrial-university relations.

7. Fulfill its present function as invention evaluation, but provide alternatives so that every effort possible is made to transfer university technology.

In conclusion, I would remind you that these ideas are offered merely as an outline for generating a feasible proposal to fulfill the void or to take the next step in the process you have initiated through your NSF patent awareness program.

Thank you for the time you have taken to read through this lengthy presentation. I hope some of the points I have raised will create issues for further discussion.

Sincerely,

George M. Stadler
Assistant Director
Research Administration

GMS:bk

Enclosures

cc: Norm Latker
Larry Gilbert
Ed MacCordy

ENCLOSURE A

Proposed Modifications of the Present NSF (RMIP) Patent Awareness Program

The following comments are offered not as a critique or a criticism of the present awareness program, they are suggested as mere observations made by a participant in the present program, without the benefits of the planning, knowledge, and experience you have gained through the implementation of the present project.

The program as outlined below could be presented at 180 universities. Each of the six region coordinators (Research Corporation representatives) would help in the implementation of an awareness program at 10 universities in his region per year over a three-year period. The program at each university would last for two years and would require the involvement (on a part-time basis--eighth- to quarter-time) of an identified university patent manager.

The proposed program would closely resemble the present NSF program in that its basic components would still be: (1) a research review, (2) indoctrination, (3) follow-up visits, and (4) evaluation.

Basic Modifications

1. The development of an in-service program for the identified university patent managers. The university patent managers, under the guidance of Research Corporation representative would develop, during the course of the seminar, an awareness program specifically tailored to the needs of his academic community. The university patent manager would then take this program back to his campus for implementation. The success of any awareness program will be modified to a large extent by the indoctrination, knowledge, commitment, and leadership the university contact (patent manager) can provide to his faculty. The education of the university patent manager before his faculty members can provide two distinct advantages:

   a. Through the on-campus seminar program the faculty members will come to recognize the patent manager as the person who has the responsibility for patent activities on their campus, and as the person they can go to with questions concerning technology transfer.

   b. A larger segment of the educational community could be reached through this approach (180 universities as compared to 8).

2. Changing the present lecture/seminar format to a seminar format with the simultaneous development of a faculty patent handbook. This handbook would address many of the issues presently handled in the lecture portion of the presentation. In general, faculty members resent being lectured about an important area of their educational development they have neglected. Their lack of familiarity with patents stems, in most cases,

from a variety of misconceptions and unfounded prejudices. The seminar should be aimed at removing these hangups, adding clarification to the issues which are of importance to them, and stimulating discussions aimed at how their present research might benefit through the use of the patent system. Further, the present lecture format, in most cases, is counterproductive by antagonizing the faculty investigator and putting him on the defensive to justify his present mode of operation. The same lecture information can be formatted into a faculty handout which would be of greater value as a "teaching aid" once the inventor is properly stimulated and sees some value in the patent system.

Proposed Program's Components

1. Preliminary research review of region's present and past research activities.

   The first step would involve the gathering of research data from each of the participating institutions, data analysis, and the final formatting of the data in order to provide a descriptive picture of the region's activities on the whole, while more specifically detailing each of the particular participants. The results of this process would then be used in helping to individualize an awareness program for each of the participating institutions.

2. Curriculum design

   The second component of the program would be broken into three areas:

   a. The development of an in-service program and the corresponding agenda for a 2-day seminar for the university patent managers.

   b. The development of basic formats for the university seminar programs. This would involve generating teaching alternatives, methods, visual aids, techniques, etc.

   c. The development of a useful faculty handbook addressing issues which are of importance to the faculty member and refuting many of the old wive's tales presently held by the academic community.

3. In-service program

   The university patent administrator (10 for each region) would attend a 2-day regional seminar. Day 1 of the seminar would be aimed at educating or indoctrinating the administrator so that he could effectively participate in the design of the patent awareness program he will be presenting on his campus. Day 2 would essentially be a workshop in which a discussion of concepts, techniques, and approaches are presented. Based on his newly acquired knowledge (Day 1) and the review of alternative approaches for developing his seminar, he, in conjunction with the Research Corporation representative and modified by the data available from the preliminary research review, would construct the seminar for his university.

4. Program Consultation

The Research Corporation representative will travel to each of his region's 10 participants on the first day of their awareness program to help with the program's initial implementation.

5. Visitations

The Research Corporation representative will make two additional visits (each 2 days in length) at each of his 10 participating universities during the remainder of the first-year period. The purpose of these visits will be to construct, to advise, and to help in the follow-up portion of the program. The "follow-ups" during the first year will be conducted monthly by the university patent manager. The structure and substance of these "follow-ups" will be determined to a large extent by the success of the seminar portion of the program.

During the second year of the program four visits (each 2 days in length) will be made to each of the 10 participants, again, to help with the "follow-ups" in addition to providing an opportunity for gathering data for the evaluation of the program's impact on the university.

6. Evaluation Report

The generation of six regional and one final report aimed at evaluating the impact of the patent awareness programs.

ENCLOSURE B

Budget Prospectus

Funds from outside sources(s) must be identified and secured to implement the changes I am suggesting. Perhaps the DHEW or a consortium of government agencies would be willing to support a program similar to what has been proposed for a period of three years in order to adequately evaluate its impact on the transfer of government-funded university technology. Thus, the program has been broken into three components in order to identify its possible costs. These components are:

1. Funds for decentralization
2. Funds for Patent Awareness Programs
3. Funds for alternative evaluation mechanisms.

Decentralization

If six regional offices were established and staffed by present members of the Research Corporation, it would probably result in a 10% increase in the company's costs of operation.

If Research Corporation's annual budget for general and administrative expenses was $1,000,000 (actual $783,432) then the costs to decentralize over a three-year period might total as much as $300,000. It would be my recommendation that these expenses be shared equally between Research Corporation and the funding source. (This would certainly demonstrate Research Corporation's COMMITMENT to the success of the project.) Thus, a request for the three-year period would be in the area of $150,000.

Note: Several alternative factors may result in the fluctuation of this figure by as much as ±30%. These factors would include the use of "Host Universities," the hiring of part-time consultants to help man the regional offices, relocation expenses, etc.

Awareness Program

These figures are based on calculations for programs at 10 universities in each of the six regions.

1. Preliminary research review of region's present and past research activities.

a.	Gathering present research data from each of the participants (through correspondence)	60 hrs. @ $50	$ 3,000
b.	Study and analysis of data	240 hrs. @ $35	8,400
c.	Clerical formatting of data	360 hrs. @ $12	4,320
		Total	$15,720

2. Curriculum design for in-service meeting of university patent managers and actual university seminar program.

a.	In-service program development		$ 3,000*
b.	University seminar program		3,000*
c.	Faculty handbook development		3,000
d.	Faculty handbook	60 @ $300	18,000
		Total	$27,000

*The $6,000 of (a) and (b) would be used to modify the program for Year 2 and again for Year 3.

3. In-service program

a. Expenses for university patent administrators (2 days)

Travel	60 @ $100	$ 6,000
Room & Meals	60 @ $100	6,000
Meeting Facilities	30 @ $250	7,500
Program	6 @ $1,000	6,000
	Total	$25,500

4. Program consultation

a. Visit by associate (1 day) to each university to help initiate the seminar program.

Travel	60 @ $100	$6,000
Room & Meals	60 @ $ 50	3,000
	Total	$9,000

5. Visitations

a. Two visits by associate (for 2 days each) to each university to help in the follow-up phase during Year 1.

Travel	120 @ $100	$12,000
Room & Meals	120 @ $100	12,000
		$24,000

5. b. Four visits by associate (for 2 days each) to each university to help in the follow-up phase during Year 2.

Travel	240 @ $100	$24,000
Room & Meals	240 @ $100	24,000
	Total	$48,000

6. Evaluation and report

a. Evaluation and report by each of the six regions.

6 @ $3,000	$18,000
Total	$167,220

Year 1 = $167,220
Year 2 = 167,220
Year 3 = 167,220

$501,660
\+ 8,000 Final Project Report

$509,660 TOTAL

Evaluation Alternatives

As the number of disclosures for evaluation goes up, the costs for acceptance under Mode A will also increase. These costs will be totally the responsibility of Research Corporation. Likewise, there will be no charges made to the grant for any inventions accepted for transfer under Mode C. Mode B (defensive publication program), on the other hand, will generate a significant increase in the costs of Research Corporation's evaluation program. Since the project will attempt to evaluate the effectiveness of this acceptance mechansim as an alternative in the transfer pocess, it is proposed that the costs involved to implement and evaluate this mode be included in the proposal.

Therefore,

Year 1, based on 20% of 800 disclosures (an increase of 50 per region due to the awareness programs)

165 proposals accepted under Mode B @ $500	$ 80,000

Year 2, based on 20% of 950 disclosures (an increase due to awareness programs)

190 proposals accepted under Mode B @ $500	$ 95,000
Year 3, based on 20% of 1100 disclosures (an increase due to awareness programs)	
220 proposals accepted under Mode B @ $500	$110,000
Evaluation Report	5,000
Total	$290,000

Summary

1.	Decentralization	$150,000
2.	Awareness	509,660
3.	Evaluation Mechanism	290,000
	Total for 3-year program	$949,660

ENCLOSURE C

Traditional and Non-Traditional Modes

Interaction Alternatives

1. License Agreement
2. Joint Development (Venture)
3. Research Contract
4. Consulting Agreement
5. Fellowship
6. Sponsored Entretreneurship
7. Venture Capital Arrangement

Rationale for Considering Alternatives

Research Corporation, to the best of my knowledge, has always attempted to transfer technology through a traditional license agreement. This mechanism, while undoubtedly the safest and perhaps the most financially rewarding, does create certain obstacles for the university community. Generally a patent or patent application must be used as equity for obtaining various financial positions in transfering technology via this route. This implies that a monetary commitment has to be made for the drafting and prosecution of an application; because of the high cost associated with patents, the process becomes quite selective. Thus, decisions on filing become closely related to the invention's marketability, while considerations of the invention's potential benefits to mankind and/or the progress of science become secondary. Since the patent system is an extension of the industrial market, the university, if it desires to participate, must play the "game" according to the rules of industry. This suggests that marketing data will be used as the primary criteria for determining what university developments will be made available to the public. Therefore inventions which have low development costs, fulfill some need, and have a large volume of potential users (or some other appropriate combination of these elements) are more likely to be accepted for patenting and licensing. Unfortunately a large volume of "valuable" university technology doesn't easily fit into this framework. Further, it is basically due to these criteria that many university types are reluctant to participate in the "game" because the goal and philosophies of the university community are out of synchronization with those of industry with regard to these issues.

While the present license agreement mode of transfer appears to be the only realistic way Research Corporation can interface with the university, some consideration should be given to other modes of transfer (non-traditional modes) which are more in tune with the university's missions. You might find that your pioneering efforts in these areas, while they might not always be financially rewarding, may turn out to be the most beneficial.

In many instances university inventions are in such an embryonic stage that the patent/license mechanism is completely unrealistic. Since the ideas are

considered valuable, confidentiality becomes a primary consideration, thus minimizing the opportunity for obtaining the necessary developmental funds. Yet equitable arrangement for transfer can still be negotiated if other alternatives to licensing are considered. Due to the depth of experience found on your present staff, Research Corporation can provide considerable leadership and consultation for the university in the exploration of these transfer alternatives (especially for inventions Research Corporation accepts under Mode B and Mode C).

You could be of enormous help in the identification and initiation of university-industry interface situations where joint development arrangements can lead to the introduction of university-conceived technology. By creating these interface situations you can relate groups which have common areas of interest. These interactions can lead to industrial-university joint proposals to the federal government for the specific development of the technology and its expeditious entrance into the market. Since royalty rates are usually much lower in these situations and since Research Corporation's capital outlay is also at a minimum level, your sharing rate for successfully negotiating a joint developed agreement would be considerably less (25-20% net income). Similarly, you may be responsible for successfully coupling a faculty member's work with an industrial interest which results in a research contract (with, of course, an appropriate clause granting the sponsor a First Right of Refusal to a license agreement of which you would again share at a level of between 15 and 10% of the net income). Further, while Research Corporation would not share in the successful arrangement of fellowship and consulting agreements, their efforts in bringing these types of interactions to fruition would not go unnoticed by the academic community, especially by the recipients. These fringe experiences with industry may lead to more important developments in the future. All the interaction modes which have been outlined up to this point wouldn't impose or generate an appreciable increase in your present work load. They could be handled or explored by an associate during the course of a normal invention evaluation.

Finally, the last two modes, Sponsored Entretreneurship and Venture Capital Arrangements, should be given serious consideration because they can be implemented through your present business operations. Sponsored entretreneurships would result from well-thought-out business endeavors where Research Corporation would provide (through its grants program) a certain percentage of the seed capital necessary to introduce an invention to the marketplace. Upon the technology's successful entrance and acceptance, decisions could be made as to continuing the enterprise or simply seeking a company in a similar area of expertise to buy out the operation. The profits that would be generated through these endeavors would be channeled back into the grants program, or perhaps a special fund for sponsoring other ventures. Perhaps other foundations can be solicited to support similar developmental efforts, thus providing a wider base to obtain the necessary seed money. Another alternative approach would be for Research Corporation to arrange for the establishment of private entretreneurship endeavors by bringing sources of venture capital together with the entretreneur (the university inventor). Research Corporation, for its efforts, would retain a certain percentage of the new fledgling company. Again, profits from these endeavors would be

channeled into the grant and patent programs. (While these alternatives look attractive, I don't have any handle on how these interaction modes would affect your present tax structure or if these types of relationships are legal under your present tax structure.)

While I'm far from having the necessary answers on implementation and maintaining these interaction modes, I would like to pursue these courses further. The important thing is to recognize that Research Corporation <u>can</u> interact in other modes if it so desires and if it is willing to explore non-traditional avenues.