RESEARCH CORPORATION

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February 19, 1983

To : A. Mitchell Liftig

From : G. M. Stadler

Re : Proposed Foundation Subsidiary

I. Introduction

Research Corporation ("Foundation") was founded in 1912 by Frederick Gardner Cottrell, a professor of physical chemistry at the University of California at Berkeley, an 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. The Foundation is incorporated in New York State under the not-for-profit corporate law, and has offices in New York City and Tucson Arizona.

The Foundation's first objective is carried out through the Invention Administration Program, which evaluates inventions made at scientific and educational institutions. The Foundation 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 per cent to the university and inventor and forty per cent to the Foundation.

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 on concepts deemed commercially and technically feasible where patents have not already been obtained, and licensing and administering the patents. The Foundation

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 the Foundation's technology are medical-pharmaceutical, agricultural, animal health, chemicals, energy and electronics. The Foundation evaluates on average 400 disclosures each year of which it accepts for handling approximately 10 per cent. The Foundation 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, the Foundation's second objective, is carried out through grants-in-aid for basic research in the natural and physical sciences. Through these programs the Foundation 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 the Foundation'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 the Foundation are 17 Nobel Prize winners. The distinguished scientists, none of whom received the prize prior to their research grant, include the five chemists (Herbert C. Brown, Georg 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).

The Foundation 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. (Copies of the Foundation's Annual Report and several other information hand-outs are attached.)

II. Background

Industry has seen its technological base erode in the face of intensifying foreign competition. It has turned to universities both as a source of research talent and future employees. On the other hand, universities are caught in a financial squeeze that is being intensified by dwindling enrollments and cut-backs in Federal support to education. Such shortfalls already have left many schools with badly outdated research laboratories and the inability to pay faculty salaries that are competitive with those in industry.

Unfortunately, industry has to fund R&D from retained earnings, borrowing, or new equity and thus has to move cautiously and thoughtfully when allocating for its R&D activities. This cautious attitude becomes even more pronounced when industry is asked to invest in third party research such as university research. Small business has an even greater problem in this area because of the limited resources and limited talent.

Even though the Federal Government must fund R&D which is necessary for our national defense and basic, long-term, high risk research in the non-defense sector, Federal support for R&D demonstrations and commercial development has been and will continue to be reduced. Thus, it appears that the private (or institutional investor will have to be called on in order to help promote scientific research and technological growth.

University research laboratories have always been a source of leading-edge technology. However, universities because of a lack of development funds have had to turn to industry for help in getting their technologies ready for the marketplace. University technologies had to be licensed to industry and while this traditional technology transfer process has met with some degree of success in the past, it really does not maximize the total university research resource. The Foundation believes that through the innovated use of R&D limited partnerships new product and process technology can be funded and developed for the marketplace. The R&D partnership is the ideal vehicle for marrying university research to large and small businesses by a variety of joint ventures, new companies start-ups, and/or third party licenses.

III. Concept

In order to take advantage of the many university and small business research opportunities that are available it is proposed that the Foundation establish a subsidiary charged with the task

of commercializing selected promising ideas from among the body of patents, invention disclosures and research opportunities available (or which will become available) to the Foundation from its university clients.

This subsidiary would act as a new venture management company and would have two principal objectives. First, the solicitation and identification of research projects likely to have potential as new products. The second objective would be to organize, structure and successfully place with various investment bankers and/or registered brokers/dealers financial proposals in the form of R&D partnerships.

IV. The Business

The new subsidiary would have access to an abundant source of university technology because of the Foundation's relationship with over 280 universities; it would endeavor to establish a similar relationship with various agencies of the Federal Government and with the small business R&D community. In point of fact, the subsidiary would become a clearinghouse for R&D partnership opportunities and for information and counseling on structuring these types of partnerships.

Because of the range of technology with regard to cost, development time, and degree of risk and because of the importance of justifying a sound projection for "return-on-investment" the subsidiary will have to offer a variety of partnership structures. Fortunately, the R&D partnership allows for the coupling of university generated technology to new company start-ups; joint ventures with existing large and or small businesses; and/or traditional third party licensing.

Since the Foundation's mission is to "advance science" most of the profits generated by the subsidiary would be used to support those projects identified as "too risky" for the private investor because of the technology's present stage of development or projected time to market. Thus the subsidiary would create a much needed "seed capital" fund for the exploitation of those "early on" ideas that have commercial potential.

Subsidiary business will be to provide consulting services to clients interested in R&D partnerships at the lowest possible cost, and, in addition, provide the mechanism and organization needed to completely structure and market partnerships. The subsidiary would endeavor to:

1. Solicit and evaluate technology suitable for R&D partnerships so that a continuous source of these opportunities are established;

2. Create, organize and package technology opportunities and develop appropriate business plans to meet the needs of each specific opportunity;

3. Provide a mechanism for the transfer (licensing, joint venturing, etc.) of technology resulting from the partnership;

4. Develop an internal capability for the marketing of developed R&D partnerships, as well as establishing a mechanism (relationship) for this marketing through established investment banking firms and registered broker/dealers;

and

5. Interface on a continuing basis with the partnerships established by the subsidiary to provide long-term (second and third round) financing either through the use of venture capital, equity placements, and/or various debt instruments.

V. Partnership Structures

As previously mentioned, high technology investment can take many forms and in order to maximize the new subsidiary's opportunities partnerships will have to be structured accordingly. The Foundation has access to an experienced group of professionals which have sucessfully organized and placed several different types of R&D partnerships. The following is a brief description of some of the different types of R&D partnerships that the subsidiary could use:

a. "Seed capital" type of investment in high risk/early on technology.

Perhaps the hardest partnership to structure and sell would be those for early on research in technologies with attractive commercial potential. These partnerships would be classical in structure and relatively modest in size ($50,000 to $350,000). The objective of the partnership will be to enhance or "add value" to the subject technology. The technology could then be transferred for further development via several established routes.

These "seed capital" partnerships could be marketed by the new subsidiary to alumni, benefactors, faculty and/or friends

[illegible] investments.

of the institution from which the subject technology originated. In addition, depending upon the number of these types of investments available (a minimum of 50 to 75 would be needed) the new subsidiary could publish a quarterly newsletter which would briefly outline the type of research each partnership is interested in exploring for clients of associated investment bankers. If a client expressed an interest in one or more of these partnerships he could get more information by contacting the general partner of the desired partnership.

Some specific examples of projects that might lend themself to this type of structure would be: nonlinear optical materials, biochips, highly absorbent cellulose substrates, synthetic enzymes/catalysts, various pharmaceutical products and diagnostic tests (See Appendix 1).

b. The R&D partnership fund for university investment in a specific technology area.

A large pool of investment capital ($3 million to $50 million dollars) could be raised for investment in university technology in a certain area (i.e. genetic engineering, medical imaging, computer software development, robotics, etc.) these funds would be allocated on a competitive basis over a period of years by the general partner to investigators to work on core research projects. The results of this research could be licensed to an associated corporate partner or packaged into potential "spin-off" new companies for further development and commercialization.

Some examples of this type partnership are: - University Genetics, Agrigentics (see Appendix 2).

c. A university invention that serves as a basis for a new company start-up.

Some university inventions because of their advanced state of development or because of large commercial potential if successfully developed and marketed lend themselves to providing the basis of a new company start-up.

These would be R&D partnerships structures wherein the investor would get tax write-offs, a percentage of royalties and equity in the new company. Size of these partnerships would be from several hundred thousands of dollars to several million dollars. Some examples would be: Fiber View Corporation; Beta, Inc.; Interactive Video Ventures, Inc.; Biological Submergible Filter Venture; Free Piston Stirling Engine Venture (See Appendix 3).

d. Focused inter-university research core organized into a new company.

The attribute of this approach is having previously competitive research groups at different universities which possess know-how and/or patent rights in an area coordinated and focused on problem solving and the production of specific marketable end-products. The manufacturing and marketing arrangements with an existing corporate partner may or may not be part of this deal. The size of these types of partnerships would be between one million and ten million dollars. Some examples would be: Targeted Pharmacueticals, Inc.; Medical Image Associates,; Arid-Agrobiologics, Inc.; Biocentrix Research Groups, Inc. (See Appendix 4).

e. A licensed (and possibly marketed) university invention which becomes the basis for expanding an R&D program through the creation of a partnership/ new joint venture.

A proven technology which would be assigned to a new joint venture could be used as a means for attracting additional funding for an expanded R&D program on related technology. The original licensee would become the joint venture's manufacturer and marketer of successfully developed products. The size of these partnerships would be from $5 million to $50 million dollars. Some examples: Bristol-Myers/Research Corporation cancer program, Evans and Sutherland/NYIT high definition television, light modulator and fiber optics screen program (Appendix 5).

f. High-tech small business involvement with university R&D groups.

Small business can interface with universities to have the university help them with the development of their technology, generate support data and/or purchase necessary equipment. These partnership interactions can and do take various directions. Their size also can vary from several hundreds of thousand dollars to several millions of dollars. Some examples: Les Carden, Ltd.; International Institute for Medical Sciences (Appendix 6).

g. Small business expansion program using R&D partnerships.

Like Example "a." above these partnerships would be fairly straightforward classical partnerships. However, unlike the "Seed Capital" investments at universities the research component would be small and the development component large making these investments much more "risk free."

However, up-side potential from investments in these types of partnerships are lower in conparison to those in high tech university research. Some examples of these types of of partnerships would be: Betty Wilkinson Designs; CDS Associates (Appendix 7).

VI. Advantages of the Concept

The advantages of forming a new subsidiary of the Foundation with the business objectives as described would be to maximize the utilization of the research base which is presently available to the Foundation. The subsidiary would also take action to expand its base of technology to include small business opportunities and Federal Government laboratory inventions. This subsidiary would become an active center that would complete deals using the R&D partnership vehicle by monitoring and promoting appropriate partnership structures. There will always be the potential for misuse when attempting to promote financial structure of this type. Therefore, a joint effort with the Department of Commerce and Research Corporation working within the structure of the subsidiary would go a long way to insuring proper partnership utilization.

Research Corporation can provide the basis and know-how to make this program work. However, it will take the support of the Department of Commerce to make the program a success.

GMS:kp

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Appendix 1

1. Nonlinear Optical Material
2. Biochips
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1. Fiber Optics Display Partnership
2. BETA
3. Interactive Video
4. Halophyte Project
5. Submergible Filter

Appendix 4

1. Targeted Pharmaceuticals, Inc.
2. Medical Imaging
3. Arid-Agrobiologicals
4. Biocentrix Research Group

Appendix 5

1. Bristol-Myers Cancer Project
2. NYIT-Technologies

Appendix 6

1. International Institutue for Medical Sciences
2. Les Carden, Ltd.

Appendix 7

1. CRS Research Associates

ACTIVE PROJECT LIST

Chemical/Pharmaceutical Agents Team

T. M. Noone
H. G. Howe
A. Bavley

Proj. No.	Inventor	Title	Status
039-0513	Tolbert	Plant Growth Regulants	11
000-0608	Weyl	Thermo-Osmotic Water Purification	11
127-0675	Haddadin	Quinoxaline-di-N-Oxides I	11
127-0714	Haddadin	Quinoxaline-di-N-Oxides II	11
091-0770	Story	Macrocyclic Compounds I	11
070-0854	Olofson	Amine Protection Group	11
091-0875	Story	Macrocyclic Compounds II	11
120-0938	Carpino	9-Fluorenylmethoxycarbonyl	11
131-1011	Kupchan	Ansa Macrolide Tumor Inhibitor	11
070-1033	Olofson	Dealkylation of Tertiary Amines	11
131-1035	Kupchan	Antileukemic Compounds I	11
131-1036	Kupchan	Antileukemic Compounds II	11
078B-1106	Stannett	Highly Absorbent Substrates	11
060-1115	Kende	Quinonoid Antibiotic Intermediates	11
067-1136	Wasserman	Synthesis of B-Lactams	11
307-1149	Curtiss	Fail-Safe Microorganisms	11
222-1152	Dubin	Balanced Anticoagulant Mixture	11
060-1159	Kende	Quinonoid Antibiotic Intermediate Isobenzoburan	11
067-1162	Wasserman	B-Lactams from Azetidines	11
131-1167	Beemsterboer	Chromatographic Purification Maytansine	11
131-1170	Kupchan	Baccharin Anti-Cancer Compound	11
010-1174	Wu	Oligonucleotides for Recombinant DNA	11
067-1180	Wasserman	Enamine-Singlet Oxygen Reaction	11
234-1188	Schmer	Heparinized PVP	11
234-1189	Schmer	High Activity Heparin	11
060-1192	Kende	Quinonoid Intermediates from Chloroprene	11
201-1201	Shefter	Zinc Aminophylline	11
206-1203	Agrawal	N-Oxide Nitroimidazole Radiosensitizer	11
304-1206	Schneider	Platelet Aggregation Agent & Method	11
190-1208	Said	Vasoactive Intestinal Peptide	11
280-1215	West	Anti-tumor Steroid Nucleoside Conjugates	11
120-1217	Lenz	Poly-B-Malic Acid and Esters	11
303-1222	Kelly	Synthesis of Daunomycinone	11
067-1225	Gray	Americium 241 Radiotherapy	11
114-1237	Deutsch	Cationic Radiopharmaceuticals	11
078A-1238	Lee	Bruceantin Synthesis	11
078A-1240	Hall	Hypolipidemic Agents	11
067-1242	Stenn	Enhanced Epithelial Movement	11
000-1244	Guntaka	Promoter in Gene Expression	11
163-1248	Hinckley	Osmium Carbohydrate Compounds	11

Proj. No.	Inventor	Title	Status
280-1252	Hechemy	Latex Agglutination Test	11
304-1253	Schneider	Platelet Aggregating Agent	11
304-1258	Holloway	Bolus for Ruminant Animals	11
283-1261	Paddock	Recombinant cDNA	11
206-1270	Gormus	Therapy Monitoring Test	11
265-1277	Suhadolnik	Antiviral Deoxyadenosines	11
206-1278	Agrawal	Nitroimidazole Nucleoside Radiosensitizer	11
304-1279	Kabalka	Preparation Radioactive Halogenated Compounds	11
120-1281	Carpino	Peptide Synthesis & Amino Acid Blocking Agent	11
128-1284	Coward	Polyamine Biosynthesis Inhibitor	11
041-1285	Ritts	Production of Human-Human Hybridomas	11
307-1286	Curtiss	Vaccine for Dental Caries	11
054-1287	Sonenshein	Plasmids for B Subtilis I	11
125-1288	Lovett	Plasmids for B Subtilis II	11
265-1290	Stern	Radiolabelling of Red Blood Cells	11
000-1294	Miller	Slug Lectin	11
262-1296	Tam	Removal Protecting Group in Peptide Synthesis	11
070-1299	Deering	Assay for Repair Endonucleases	11
070-1307	Allcock	Bioactive Aminoarylosyphosphazenes 1	11
070-1308	Allcock	Bioactive Phosphazene High Polymers	11
070-1309	Allcock	Heparinized Poly(organophosphazene)	11
041-1312	Sanders	HMM-NO Antitumor Agent	11
280-1317	Macario	Slide Immunoenzymatic Assay	11
070-1323	Benkovic	Preparation of Single-Stranded DNA	11
041-1324	Roberts	Crytococcal Latex Test for Antigens	11
120-1325	Carpino	DBD-TMOC Blocking Agent	11
078A-1328	Wyrick	N-Benzoylsulfamate & Benzosulfonomide-Hypolipidemic Agents	11
265-1337	Schwartz	DHEA as Anticancer Agent	11

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ACTIVE PROJECT LIST

Diagnostic Agents Team

M. Schwarcz
H. G. Howe
A. Bavley

Proj. No.	Inventor	Title	Status
107-0617	Koprowski	Rabies Vaccine	11
125-0707	Moulthrop	Infectious Bursal Disease Vaccine	11
000-0745	Fox	Silver Sulfadiazine Burn Ointment	
278-0828	Miller	Pseudomonas Vaccine	11
039-0845	Rosenberg	Antitumor Platinum Compounds	11
000-0927	Fox	Burn Ointment Enzyme	11
054-0933	Najjar	Phagocytosis Stimulating Peptide	11
200-0945	Chang	Microencapsulated Detoxicants	11
278-1007	Gaafar	Gonorrhea Detection Method	11
201-1010	Subramanian	Radiopharmaceutical for Skeletal Imaging	11
265-1015	Dugan	Blood Clot Detection Method	11
070-1060	Schisler	Delayed Release Mushroom Nutrient	11
000-1070	Hiatt	Coherin	11
000-1090	Fox	Hypertonic Solution	11
000-1100	Fox	Zinc Sulfadiazine	11
201-1101	Subramanian	Technetium 99m Stan Imidodi-phosphonate	11
287-1112	Borris	Enzymatic Poison Ivy Treatment	11
278-1113	Gaafar	Modified Immunofluorescent Test	11
070-1114	Keith	BHT Antiviral Agent	11
000-1118	Fox	Cerous Sulfadiazine	11
000-1119	Monafo	Cerium Nitrate-Silver Sulfadiazine	11
234-1125	Caldwell	Trachoma and NGU Test	11
130-1127	Hough	Chlorosucrose Compounds	11
201-1132	Silverstein	Sarcoidosis Test	11
304-1144	Bucovaz	Cancer Detection Test	11
306-1146	Kaul	Drug Detection Method	11
070-1168	Davidson	Tumor Specific Clycoproteins	11
201-1171	Johnson	Synthesis of Anthracyclines	11
212-1172	Bahl	Early Pregnancy Test	11
278-1173	Chu	Prostatic Cancer Detection Test	11
206-1175	Fisher	Erythropoietin Radioimmunoassay	11
067-1176	Prusoff	Nitrosourea Analogues Thymidine	11
278-1182	Gaafar	Enzyme Gonorrhea Test	11
304-1185	Bucovaz	t-Factor from Bakers Yeast	11
242-1186	Doyle	Agglutination Gonorrhea Test	11
070-1195	Keith	Di-tert-butyl Phenol Antiviral Agents	11
218-1204	Oeschger	Safe Live Vaccines	11
234-1212	Grayston	Formalinization of CT Organism	11
280-1218	Chu	Immunological Test for Prostate Cancer	11
278-1231	Stevens	Syphilis Test	11
076-1246	Eckelman	Quinuclidinyl Radiopharma-ceuticals	11
218-1247	Feller	Breast Cancer Test	11

Proj. No.	Inventor	Title	Status
067-1254	Lerner	Lupus Erthematosus Test	11
304-1255	Bucovaz	Qualitative Test for B Protein	11
067-1260	Miller	Nucleic Acid Hybridization Diagnostic Test	11
265-1267	Olexa	Method of Locating Thrombi	11
265-1271	Olexa	Fibrin Polymerization Inhibitor	11
000-1274	Fox	Antimicrobial Silver Compositions	11
280-1275	Lee	Monoclonal Antibodies to PAP	11
304-1176	Bucovaz	Labelled ACP Cancer Test	11
280-1280	Jou	Erthrocyte-Coupled Antigens & Antibodies	11
054-1291	Najjar	Tuftsinyltuftsin and Related Peptides	11
234-1292	Schiffmann	FMLP Silver Sulfadiazine	11
070-1300	Mizel	Interleukin Production	11
275-1311	Rhodes	Radiopharmaceuticals Localization Thromboemboli	11
075-1313	Cidlowski	Detection V-B6 by Monoclonal Antibodies	11
067-1330	Prusoff	Anticancer Agent	11
067-1331	Prusoff	Cancer Treatment Method	11
078A-1331	Boucher	Aerosolized Amiloride Cystic Fibrosis Treatment	11
125-1335	Fraser-Reid	Synthesis of Daunosanime & Analogs	11

ACTIVE PROJECT LIST

Electronics/Instrumentation Team

J. S. Fulleylove
R. Goldsmith
R. M. Williams

Proj. No.	Inventor	Title	Status
000-0360	Townes	Maser	11
067-0628	Hirshfield	Electron Cyclotron Maser	11
153-0630	Honig	Infrared Image Transduction	11
062-0638	Woodbury	Magnetic Analog Storage Device	11
062-0711	Pearson	Gunn Oscillator	11
000-0716	Farrell	Freeze Branding	11
000-0743	Ahamed	Electrical Slip Meter	11
010-0746	Eastman	Microwave Power Generator	11
000-0772	Harris	FM Laser	11
000-0840	Farrell	Laser Branding	11
000-0848	Farrell	Branding Living Animals (Angle System)	11
000-0907	Tang	Atomic Frequency Converter	11
077-0914	Daunt	High Field Superconductor	11
201-0919	Mozley	Tomographic Imaging System	11
232-0935	Watanabe	Map Scanning Rectifier	11
070-0959	Kenney	Dynamic Radiography	11
201-0963	Walsh	Data Communication System	11
072-0965	Beasley	Radio Noise Detectors	11
045-0975	Wittry	Electron Microscope Scanning System	11
070-0984	Roy	Luminescent Light Source	11
153-1020	Kornreich	Electric Fourier Transf.	11
046-1024	Hanton	Electronic Livestock Identification System	11
000-1043	McCorkle	X-Ray Traveling Wave Amplifier	11
000-1051	Happer	Resonance Device	11
030-1057	Senitzky	Matched Optical Filter	11
000-1062	Farrell	Unalterable Alphabet	11
266-1065	Swallow	CHARGE Display	11
081-1068	Cohen	SEM Accessory	11
010-1084	Tang	Electro-Optically Tuned Lasers	11
070-1085	Brownlee	Ventricular Programmed Pacemaker	11
070-1086	Tyers	Rechargeable Cardiac Pacemaker	11
070-1092	Hughes	Pacemaker Electrode System	11
234-1111	Callis	Video Fluorometer	11
070-1143	Tyers	EMI Protected Pacemakers	11
070-1147	Tyers	Cardiac Pacer Energy Conservation	11
070-1148	Tyers	Cardiac Pacer Monitoring Technique	11
070-1160	Hughes	Cardiac Electrodes for Temporary Pacing	11
201-1179	Bruckenstein	Conductometric Gas Analysis Cell	11
039-1197	Enke	Tandem Quadrupole Mass Spectrometer	11
060-1205	Wheeless	Cytofluorometer	11
070-1227	Brownlee	Pacemakre EKG Telemetry System	11
069-1249	Vestal	Ion Vapor Source for Mass Spectrometry	11

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Proj. No.	Inventor	Title	Status
060-1250	Kay	Modified Cytofluorometer	11
070-1256	McInerney	Multichannel Dynamic X-Ray Radiography	11
070-1256	Hughes	Improved Atrial Pacemaker Lead	11
039-1305	Enke	Magnetic TOF Mass Spectrometer	11
039-1321	Enke	Integrating Transient Recorder	11

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ACTIVE PROJECT LIST

Physical Science Team

H. A. Eckhardt
J. G. Stumpf

Proj. No.	Inventor	Title	Status
070-0579	Meyer	Automatic Brake Control System	11
041-0603	Owen	Automatic Prothrombin Timer	11
000-0627	Malifaud	Radiation Concentrating Device	11
078B-0665	Humphries	Cucumber Harvester	11
134-0696	Beale	Free Piston Stirling Engine	11
202-0730	Lotmar	Retinal Photocoagulator	11
000-0765	Baer	Op Apparatus Focal-Plane Illumination	11
010-0798A	Bowers	Non-Destructive Testing	11
010-0798B	Houck	Ultrasonic Transducer	11
084-0823	Healy	Prefabricated Plastic Filter Drain	11
215-0824	Hargens	Optical Filamentary Photocell	11
215-0825	Hargens	Optical Fiber Transducer	11
215-0826	Hargens	Photosensitive Plotter	11
067-0857	Glenn	Stimulation of Body Tissue	11
161-0875	Webb	Clemson Fruit Harvester	11
068-0878	Goodman	Sizing Machine	11
131-0886	Kauzlarich	Hydraulic Squeeze Bearing	11
078B-0891	Hamann	Sorter for Resilient Objects	11
070-0893	Moroz	Portable Dust Analyzer	11
070-0906	Stephenson	Digging Machine for Balled Plants	11
078B-0912	Holmes	Pneumatic Seed Meter	11
078B-0922	Huang	Seedling Transplanter Tray	11
000-0924	Huang	Automatic Transplanter Machine	11
078B-0970	Rohrbach	Fluidic Seed Meter	11
078B-0974	Clark	Furniture Construction	11
078B-0987	McClure	Blueberry Sorter	11
237-0992	Leahey	Film Support Assembly	11
078B-1012	Johnson	Tobacco Processing System	11
091-1032	Carr	Blood Coagulation Timer	11
264-1034	Tsang	Flue Stack Extension	11
161-1037	McHugh	Tractor-Mounted Fruit Harvester	11
078A-1041	Hulka	Sterilization Clip and Applicator	11
009-1049	Denton	Nebulizer Burner for Flame Spectroscopy	11
078A-1050	Hulka	Controlling Forceps	11
070-1074	Klaus	Die Lubrication System	11
070-1075	Kjelgaard	Ammonia Application	11
041-1080	Winkler	Radiation Protection Curtain	11
234-1091	Sigelmann	Ultrasonic Coagulation Timer	11
153-1095	Murray	Knee Joint Prosthesis	11
212-1095	Murray	Knee Joint Prosthesis	11
091-1098	Law	Electrostatic Atomizing Nozzle	11
100-1109	Clune	Hemofoil Heart Valve	11
234-1121	Auth	Photocoagulating Scalpel	11
066-1165	Ellis	Edge Enhancement Microscope	11
070-1207	Leary	Cell Sizer	11

Proj. No.	Inventor	Title	Status
002-1211	Andres	Particle Separator	11
051-1216	Olson	Cast Iron Welding Materials	11
070-1266	Pierce	Trileaflet Heart Valve	11
156-1268	Groves	Strafified EGR Engine	11
070-1315	Goodrich	Programmable Tooling for Parts Feeder	11
070-1318	Pierce	Vascular Prosthesis	11
139-1320	Park	Thermocentrifugometric Analyzer	11

ACTIVE PROJECT LIST

Life Science Team

B. M. Kosloski
R. W. Piwonka

Proj. No.	Inventor	Title	Status
000-0842	Bradner	Suntan Composition	11
072-0879	Kaye	Vinyl-Substituted Pyrimidines	11
142-0890	Petit	Conversion of Triterpenes to Steroids	11
157-0941A	Vieth	Enzyme Active Membrane	11
157-0941B	Vieth	Bio-Catalytic Module	11
157-0941C	Vieth	Electro-Codeposition Enzyme	11
157-0941D	Vieth	Enzymatically Active Protein	11
068-0946	Carta	Production of Single Cell Protein	11
010-0947	Roelofs	Codling Moth Pheromone	11
010-0948	Roelofs	Grape-Berry Moth Sex Pheromone	11
051-0973	Gunja-Smith	Cytophaga Isoamylase	11
082-1008	Rutledge	Chemical Modification of Rice	11
114-1016	Day	Cationic Alkylating Agents	11
077-1017	Bose	Epimerization of Unhindered Steroids	11
070-1019	White	Implant Casting Method	11
070-1029	Roy	Synthetic Bone	11
104-1030	Davis	Trihydroxyazopurines	11
157-1038	Davis	Non-Immunogenic Compositions	11
007-1039	Fox	Anti-Leukemia Agent	11
139-1047	Cheek	Hatching Agents for Sugar Beet Nematode	11
010-1048	Roelofs	Grape Vine Moth Attractants	11
091-1053	Travis	Albumin Recovery Method	11
010-1067	Roelofs	Tobacco Budworm Sex Pheromone	11
091-1073	Kent	Contraceptive Polypeptides	11
091-1103	Huber	Rumen Inoculum	11
007-1110	Fox	Pesudoisocytidine Synthesis	11
070-1122	White	High Surface Area Membrane	11
000-1126	Parker	Steroid Intermediates	11
125-1130	Mazzocchi	Benzazocines Analgesics	11
296-1133	Malley	Modified Allergens	11
262-1140	Erickson	Anti-Anaphylatoxin Peptide	11
000-1140	Erickson	Anti-Anaphylatoxin Peptide	11
000-1153	Harmening	Blood Preservation System	11
070-1156	Allcock	Phosphazene-Platinum Complexes	11
007-1157	Fox	Synthesis of Pseudoisocytidine	11
068-1161	Wolfe	Quinazolinone Anticonvulsants	11
242-1181	Yankeelov	Thiomethylene Peptide Analogs	11
066-1183	Nicolaou	Prostacyclin Analogs	11
278-1187	Bobek	Anticancer Nucleosides	11
296-1190	Malley	Oxidized Allergens	11
091-1191	Stammer	Synthesis of Dehydropeptides	11
121-1193	Bayer	Lobster Vaccine	11
157-1196	Kent	Tetrapeptide Ovulation Enhancer	11
007-1198	Pinter	Feline Leukemia Vaccine	11
265-1199	Eisenstein	Group B Streptococcus Vaccine	11

Proj. No.	Inventor	Title	Status
066-1200	Nicolaou	Pyridazaprostacyclins	11
066-1202	Nicolaou	Thrombozane A2 Analogs	11
065-1209	Ma	Stabilized Liquid Aspirin	11
091-1214	Goven	Fish Vaccine	11
066-1219	Nicolaou	Carbocyclic Thromboxane A2	11
304-1220	Lozzio	DMSO-Platinum Antitumor Complexes	11
073-1230	Shaw	Anticoagulant Peptide	11
278-1232	Gaafar	Toxoplasmosis Vaccine	11
002-1234	Turkevich	NMG Platinum Acid	11
029-1235	Schmitz	Acanthifolic Acid	11
114-1239	Wilson	Pine Beetle Pheromone	11
139-1245	Woodard	Brucellosis Vaccines	11
082-1251	Beadle	Horse Sweating Test	11
075-1262	Brown	Quinuclidinium Platinum Compounds	11
139-1263	Waldhalm	EAE Vaccine	11
287-1264	Riley	Histamine H2-Antagonists	11
242-1273	Jarboe	Probenecid-Dyphylline Therapy	11
157-1282	Strausser	Thymosin V & Suppressor Cell Stimulant	11
322-1283	Regen	Polymerized Choline Vesicles	11
304-1289	Lasslo	Platelet Aggregation Inhibitors	11
066-1293	Nicolaou	Leukotriene A4 Analogs	11
075-1295	Brown	Five-Coordinate Platinum Anti-cancer Compounds	11
082-1297	Day	Purification of Cellobiase	11
234-1301	Teng	Orally Active Heparin	11
296-1302	Malley	Anti-Timothy Anti-Idiotypic Antibodies	11
070-1304	Lipton	Platelet Derived Tumor Growth Factor	11
082-1306	Newkome	Palladium Antineoplastic	11
253-1310	Clark	Benzamide Anticonvulsants	11
234-1314	Teng	Orally Administered Insulin	11
039-1316	Rosenberg	Palladium Anticancer Agents	11
082-1319	Kuu	Improved Immolulized Biocatalysts	11
070-1322	Jacob	SLE & MCTD Diagnostic Test	11
265-1326	Schott	Stable Oil-in-Water Emulsions	11
280-1327	Gaafar	Toxoplasmosis Factor	11
120-1329	Carpino	Polymer for Peptide Synthesis	11
000-1333	Clark	Triacontanol Herpes Medication	11
000-1334	Clark	Triacontanol Acne Treatment	11
082-1336	Rawls	Dental Polymers	11

Revised 2/4/83

ACTIVE PROJECT LIST

Systems/Process Technology Team

D. M. Coyne
M. J. Suber

Proj. No.	Inventor	Title	Status
142-0735	O'Bannon	Stabilization of Clay Soils	11
157-0739	Dittman	Improved Filter Cake Removal	11
142-0761	Klock	Submerged Biological Filter	11
072-0786	Davison	Reverse Osmosis	11
207-0787	Heine	Photochromic Compounds	11
222-0817	Pytlewski	Positive Adherent Coatings	11
211-0850	Marble	Culture of Anaplasma Marginale	11
000-0853	Stanton	Fission-Fusion Nuclear Fuel	11
194-0884	Coughlin	Radiation Annealing of Membranes	11
142-0940	Klock	Submerged Filter Horizontal Flow Mode	11
009-0983	Freiser	Coated Ion Selective Electrodes	11
260-1001	Kusterer	Gaseous Diffusion Paper Deacidification	11
084-1009	Scarchuk	Bush Acorn Squash	11
135-1021	Levine	Synthesis of Meperidine	11
115-1054	Neckers	Polymer-Based Sensitizers Photo-oxidation	11
002-1105	Bernstein	Isotope Separation Method	11
120-1123	Galinat	Improved Hybrid Seed Corn	11
212-1154	Flashner	Production of Neuraminidase	11
177-1155	Laing	Cattle Pregnancy Test	11
000-1166	Hagiwara	Waste Treatment Apparatus	11
246-1169	Maan	Hybrid Wheat	11
139-1194	Jackson	Deep Tank Aeration/Flotation	11
316-1221	Jannasch	Bacterial Chemosynthesis Aquaculture	11
177-1223	Heap	Milk Embryo Test	11
070-1228	Langton	High Temperature Cement	11
000-1229	Milkovich	Graft Copolymers	11
157-1241	Ellison	Asparagus Hybrid	11
078B-1269	Cuculo	Cellulose Fiber Process	11
039-1272	Pinnavaia	Silica-Clay Complexes	11
070-1298	Schultz	Reactor Liquid Level Gauge	

Revised 2/4/83

5-17.
Dan Coyne

RESEARCH CORPORATION

CREATED 1912 - F. G. COTTRELL

CHARITABLE, PRIVATE FOUNDATION

PURPOSES

- ADVANCE SCIENCE AND TECHNOLOGY
- SUPPORT SCHOLARLY RESEARCH
- MAKE INVENTIONS MORE AVAILABLE

PROFESSIONAL STAFF - 50

GROSS REVENUE - $12 MILLION

DISTRIBUTION - $8 MILLION

ASSETS - $50 MILLION

PROGRAMS

INVENTION ADMINISTRATION

GRANTS

INVENTION ADMINISTRATION

AGREEMENTS - 287 UNIVERSITIES AND NONPROFIT INSTITUTIONS

SUBMISSION OF DISCLOSURE - option on both sides

EVALUATION - turn back 9 out of 10

Phil 6 - asked for detail
single indiv. perception - contact inventor → indirectly contacts
12 people to work at 500 inventions

PATENTABILITY

Key - is it marketable - when license cost born by company - is underdeveloped to that pt.

TECHNICAL FEASIBILITY

COMMERCIAL POTENTIAL

PATENTING its assigned to RC

LICENSING RC ½ expenses, ½ grant system
60-40 split of revenue
from license

reject 90 of 100 - of 10 choose 1 is successful
1 invention 5 million a yr. hits are big

COMMERCIAL POTENTIAL

PRESENT SERVICES

RESEARCH CORPORATION'S EXPENSE

CONTINUE TO OFFER THIS SERVICE

COST-EFFECTIVE METHOD

RESEARCH CORPORATION

- NEW MANAGEMENT AND STAFF

  DR. JOHN SCHAEFER - PRESIDENT

  MR. GEORGE STADLER - VICE PRESIDENT

  EMPLOYEES WITH INDUSTRIAL/BUSINESS BACKGROUND

- REORGANIZATION, RELOCATION AND REORIENTATION

COMPLETE PATENT MANAGEMENT

A NEW OPTION UNDER RESEARCH CORPORATION'S

INVENTION ADMINISTRATION PROGRAM

exclusive arrangement - but still maintain
non-excl.

NEW SERVICES - COMPLETE PATENT MANAGEMENT

- LIMITED NUMBER OF RESEARCH UNIVERSITIES
- DIRECT COMMERCIAL/INDUSTRIAL INTERACTION
- MEET SPECIFIC NEEDS of U.
  - closer to companies - contacts / pat. R of U.
- EXTEND PRESENT PROGRAMS
  need person on campus doing TT

ACTIVITIES

- PATENT AWARENESS PROGRAM on campus
- ON-CAMPUS ASSISTANCE
- ADVISE ON PATENT ISSUES
- WRITTEN REPORTS ON DISCLOSURES
- UTILIZE FLEXIBLE BUSINESS METHODS
- INTERNATIONAL PATENTING AND LICENSING
- SEEK OUTSIDE SUPPORT

PROGRAM

I - UNIVERSITY RESEARCH EVALUATION

II - PATENT AWARENESS

III - MONITORING AND CONSULTATION

IV - EVALUATION AND PROTECTION

V - TECHNOLOGY TRANSFER

VI - LICENSE ADMINISTRATION

I - ANALYSIS

STUDY UNIVERSITY - PHILOSOPHY, FACULTY AND STAFF, ETC.

DESIGN OPTIMAL APPROACH FOR UNIVERSITY-FOUNDATION INTERACTION

II - AWARENESS

BASED ON RESULTS OF PHASE I

REQUIREMENTS FOR TECHNOLOGY TRANSFER

III - MONITORING

- ON-CAMPUS REPRESENTATION
- IDENTIFICATION OF INVENTIONS
- EMPHASIS ON COMMUNICATION AND INTERACTION
- PERIODIC VISITS BY STAFF

IV - EVALUATION

TECHNICAL FEASIBILITY

PATENTABILITY

COMMERCIAL POTENTIAL - the Key

V - TECHNOLOGY TRANSFER

PATENT/LICENSE AGREEMENTS - have to pay regardless - induce co. to develop - i.e. few thousand brown up to 10K minimum royalty -

ENTREPRENEURSHIP

VENTURE CAPITAL - U not become part of - RC take turn over to U.

JOINT UNIVERSITY/INDUSTRY DEVELOPMENT

= arms length for tax purposes

R & D PARTNERSHIPS

G.S. Un-Genetics