

Koppers-University Collaboration

How one company and universities cooperate successfully; typical agreement is included

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In 1979, Koppers management decided to expand the Company's exploratory or long-range research effort. Included in this expanded research effort was a program to sponsor research in universities, a program which was later given the title of External Research. The purpose of this article is to acquaint you with the approach we used to establish this program, some of the problems we encountered along the way, particularly with respect to legalistic agreements that define the rights and obligations of the universities and Koppers, and where the program now stands.

Hopefully, this information will be useful to both university and industrial people in understanding each other's points of view and in expediting the process of reaching agreement in the future under similar circumstance. This information is particularly pertinent to a group which has as one of its purposes the promotion of industrial support of university research.

The purpose of Koppers' External Research Program is to acquaint and involve Koppers with new or emerging technologies that may provide a basis for new businesses for Koppers in a five- to ten-year time frame. By focusing this program on research in universities where related or similar research is already underway, benefits are expected to accrue to both Koppers and the university. For Koppers' benefit the research will be supervised by a professor who is an acknowledged expert in the field of interest and the inefficiencies of the early part of the learning curve and the capital costs needed to equip a laboratory are largely avoided. For the university's benefit a research area of interest to the professor and the university is provided added financial support to the furtherance of the university's objectives of adding to man's store of knowledge and of training scientists in research at the graduate and post-doctoral levels.

Areas of Interest

The world of science is a very large place. The first problem encountered in setting up the External Re-

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search Program was that of identifying areas of likely interest. One criterion of the suitability of a research area is whether the new technology would be expected to fit into the products or markets with which Koppers is familiar.

Experts in the area of acquisitions and new product development tell us that the likelihood of success in a new venture is low if it involves new technology, new products and new markets all at the same time. For example, Koppers is a major producer of resorcinol, a new technology that might lead to a new and better way of making resorcinol would be of great interest to Koppers.

On the other hand, Koppers is not in the pharmaceutical business and does not expect to be. A new technology that might lead to a new or better pharmaceutical chemical is not of great interest to Koppers. This first criterion was of only limited value in selecting areas of interest for the External Research Program because of our desire to broaden the company's technology base. The second criterion was seat-of-the-pants judgment based upon many years of exposure to what Koppers is and does, and hopes for what Koppers might become.

Having selected an area of interest by whatever means, the second problem was that of identifying universities and professors who were prominent in research associated with that area of interest. Scientific publications, various abstracting services, including Dissertation Abstracts, the Directory of Graduate Research, and suggestions of associates were all used in this identifying process which might yield one or several names.

This was followed by the usual procedures of contacting by mail or by telephone to acquaint the professor with Koppers Company since we realize that Koppers is not a well known name in all parts of the country. This also served to acquaint the contact person with Koppers' External Research Program, and to obtain an expression of interest on the professor's part. Usually, this led to a trip to the university and an extended discussion with the professor to narrow the definition of the area of interest to the limits of a manageable research project that had appeal to both the professor and Koppers.

Provided all signs were still "go", the professor was asked to prepare a written technical proposal describing the proposed research and the costs. In some instances this technical proposal bore little resemblance to our original perception of the area of interest but evolved from the discussions that gave the professor a better understanding of Koppers and the objectives of the External Research Program. And it gave us a better understanding of the new technology. Unless

there seemed to be a high probability of acceptances, a written technical proposal was not requested so as not to burden our academic friends unnecessarily with paper work.

Agreement Legalities

When a technical proposal had been reviewed and accepted, the next problem in the External Research Program was to negotiate a legalistic agreement that would define the rights and obligations of the university and Koppers. In our naivete we expected this part of the program to proceed easily and rapidly. Quite to the contrary, it has been arduous and sometimes frustrating.

The research agreement which has evolved from a great deal of negotiation is an eight-page document which covers some 15 points. Some of these points are legal boilerplate that is necessary but not contentious. Others involve fundamental differences in point of view of the university and Koppers and required a good deal of discussion and negotiation. Each point will be discussed briefly.

Parties to the Agreement

Depending upon the policies and organization of the university, the agreement may be with the university per se or with a foundation associated with the university. Also, the professor who is the principal investigator may be a party to the agreement if university policy invests these rights in him.

24 *Subject of the Agreement*

The subject of the agreement is determined by the technical proposal that was prepared by the principal investigator and was accepted by Koppers. The technical proposal is an attachment to and a part of the agreement. The technical proposal needs to be broad enough to accommodate the shifts in emphasis that the progress in research requires but specific enough to distinguish this research from other research interests of the professor and the university.

Financial Conditions

The financial conditions of the agreement are concerned primarily with the total cost as defined in the budget contained in the technical proposal and the schedule of payments to the university. The typical agreement is for one year with payments scheduled quarterly.

Invention and Patent Rights

Invention and patent rights have been the most contentious parts of the research agreements we have made to date. Therefore, a more detailed discussion of this topic seems warranted. As stated earlier, the purpose of Koppers' External Research Program is to acquaint and involve Koppers with new and emerging technologies that may provide a basis for new businesses for Koppers in a five- to ten-year time frame.

In our judgment the best way to achieve this objective is for Koppers to draft and apply for any patents which evolve from the supported research and for Koppers to hold title to any issued patents provided Koppes is diligent in the development and commercialization of the patented invention. We believe Kop-

pers, compared to the university, is in a better position to judge the commercial merit of an invention and to interpret this judgment into a sound enforceable patent. Also, we believe that holding title to the patent is necessary in order to justify the very large expenditures, frequently 100 or 1000 times the cost of the initial research, which are required to develop and commercialize the invention. The right of first refusal to license a patent issuing from the sponsored research and held by the university is not an acceptable alternative as some universities have proposed.

In typical agreements the foregoing position has been modified significantly by limiting the time which Koppers has to file for U.S. and foreign patents, by returning to the university rights to inventions on which Koppers does not choose to file, and by providing the university with a royalty-free license to practice patented inventions for research and teaching purposes.

Some universities have had difficulty accepting the foregoing arrangement either because of policy or experience. We suspect that their point of view has been strongly influenced by their dealings with government agencies that have been a principal source of funding for university research. On the other hand, we believe this patent policy is an important part of our External Research Program and we will only yield on this point if someone can offer an alternative that will accomplish the same result.

Commercialization of the Invention

A generally accepted purpose of university research is to increase man's knowledge of the world and to make the fruits of this knowledge available to the public at large. Accordingly, Koppers agrees to commercialize patented inventions issuing from the sponsored research through internal development or through licensees within a specified time. If Koppers fails to do so, title to the patent reverts to the university. This provision of the agreement prevents the suppression of a useful invention, an action which is sometimes reported but is probably reported much more often than it actually occurs.

Royalty Income

Even though Koppers insists on holding title to patents issuing from sponsored research, Koppers is prepared to pay the university a royalty for monetary benefits resulting from the practice of the invention. A major difficulty is that the nature of the invention is unknown at the time of writing the agreement as is also an appropriate basis for calculating the royalty. Obviously, the royalty must not make the product or process covered by the invention noncompetitive in the marketplace. In the final analysis, the amount of royalty must be negotiated in good faith when the time comes and cannot be determined at the time the research agreement is signed.

Publication Rights

Universities zealously guard their right to publish the results of their research and Koppers has no desire to interfere with this right. However, Koppers does ask to review contemplated oral or written publications prior to their release so as not to jeopardize either U.S. or foreign patent applications. A tight

timetable for this review prevents any possibility of suppression of information or unreasonable delay of publication.

Record Keeping

Good records are an essential part of good research and are vital to a defensible patent. The maintenance of good records is a requirement of all our agreements. Quarterly summary reports and annual detailed reports are specified as the principal means of keeping Koppers informed of the progress of the sponsored research, although periodic visits by Koppers personnel to the university and visits by the principal investigator to Koppers Monroeville Research Center are expected.

Employment Relationships

All individuals taking part in the sponsored-research activities are considered employees of the university, not of Koppers. With the ever increasing responsibilities and liabilities of employers, this is an important part of the legal boilerplate.

Term, Termination and Renewal

It is our expectation that External Research projects will continue for several years even though typical agreements are for only one year. Agreements call for a firm commitment for renewal at least 45 days prior to the end of the agreement year. Obviously, renewal will depend upon the willingness of the university to continue the relationship and upon Koppers evaluation of the research performed to that date.

Exclusivity and Confidentiality of Relationship

It is quite likely that research similar to that sponsored by Koppers will proceed simultaneously in the same university and department and possibly under the direction of the same professor. Koppers asks to be advised of possible areas of conflict of interest so a judgment can be made as to its importance to Koppers interests. Such circumstance may or may not require termination of the project.

Confidentiality of Technical Information

A sponsored-research project may require that the participants be given proprietary information to effectively relate to Koppers interests. The holding of this information in confidence is essential to Koppers' position in the marketplace and is a requirement of the agreement.

Key Personnel

The expertise of the professor who directs the sponsored research is an essential part of the justification for the project. Therefore, continuation of the project is conditioned on Koppers' approval of any change in leadership if a change becomes necessary for whatever reason.

Assignability

The research agreement is not assignable without the consent of the other party and all of the rights and duties of the agreement pertain.

Governing Law

The agreements usually have been drawn to be governed and construed according to the laws of the Commonwealth of Pennsylvania. This is not because these laws give Koppers any advantage but because the laws among states may vary slightly and confusion is avoided by naming one.

Currently, Koppers' External Research Program involves a number of diverse projects in an equal number of universities and different states. It is much too early to judge the success of the program but we are optimistic that it will be of long-term benefit to both Koppers and the participating universities.

As progress is made in these research projects we expect in most cases that parallel projects will be set up in-house to develop the new technology into commercial processes and products. Close cooperation between the university and Koppers personnel will be essential to this development and challenging career opportunities will be available to students interested in following the new technology into the industrial environment.

We believe that considerable benefit can accrue to industry and universities by industrial support of university research along the lines of Koppers' External Research Program. We hope that a better understanding of the industrial point of view by universities and the academic point of view by industry can significantly shorten the time and effort required to reach agreement for industrial support of university research. We believe that the successful commercialization of inventions resulting from university research is more likely if title to patents rests with the industrial partner and that only through successful commercialization will royalties make a significant contribution to the support of university research and other university goals.

TYPICAL KOPPERS AGREEMENT

3.0 INVENTION AND PATENT RIGHTS

3.1 UNIVERSITY shall be responsible for ensuring disclosure to KOPPERS of any and all Novel Developments within thirty (30) days of discovery or finding of a Novel Development.

3.2 KOPPERS shall have a period of nine (9) months to file in the United States Patent and Trademark Office a patent application covering a Novel Development which has been disclosed by an investigator to UNIVERSITY in keeping with UNIVERSITY patent regulations, said nine-month period dating from the receipt by KOPPERS of a disclosure of said Novel Development in a form which is sufficiently complete for KOPPERS to prepare a fully-enabling patent application. KOPPERS shall have an additional nine (9) month period from the U.S. filing date in which to file counterpart applications covering said Novel Development in countries foreign to the United States. In the event KOPPERS fails to file U.S. or foreign patent applications within said periods, KOPPERS shall have rights to an irrevocable, nonexclusive, royalty-free license to make and use, but not for production or sale, any subject matter of a patent which issues, U.S. or foreign, upon said Novel Development.

3.3 Within ninety (90) days after the filing of a patent application upon a Novel Development by KOPPERS under Section 3.2, UNIVERSITY shall make assignment to KOPPERS of entire right, title and interest in and to said Novel Development and all patent rights which may be obtained in said Novel Development, said assignment to be made without further compensation.

3.4 In the event of issuance of a U.S. or foreign patent to KOPPERS upon a Novel Development, KOPPERS shall grant to UNIVERSITY an irrevocable, nonexclusive, royalty-free, nontransferable license to make and use the subject matter of any patent covering said Novel Development, any such license being limited to research, teaching and development activities practiced at UNIVERSITY.

3.5 "Novel Development" means any discovery, new conception or observation derived from work performed or data collected during research activities funded wholly or partly by KOPPERS during the term of the Research Agreement.

3.6 "Patent" means any issued United States Letters Patent disclosing and claiming a Novel Development, including a reissue patent, a patent issuing from a continuation application, divisional application or continuation-in-part application, and means any foreign patent including a patent of addition relating to a Novel Development.

3.7 In order that KOPPERS may perfect its rights of ownership to any Novel Development upon which a patent application has been filed by KOPPERS, UNIVERSITY agrees to require each investigator funded wholly or partly by KOPPERS to cooperate and assist in, and sign any document required for, the preparation and prosecution of any patent application prepared by KOPPERS relating to said Novel Development, without additional compensation other than reimbursement for out-of-pocket costs incurred in furnishing cooperation and assistance to KOPPERS.

3.8 UNIVERSITY warrants that it will obtain from each investigator executed documents sufficient to ensure assignment to KOPPERS of rights of ownership set forth in Section 3.7, said documents containing acknowledgement that the heirs and assigns of each investigator are bound by the aforesaid commitments to render assistance and execute documents wherever feasible to perfect invention and patent rights in KOPPERS.

4.0 COMMERCIALIZATION

4.1 KOPPERS recognizes that an important objective of UNIVERSITY is to make available to the public the fruits of research through commercialization of Novel Developments. KOPPERS agrees, therefore, to use reasonable efforts in commercializing a Novel Development or in identifying and securing one or more licensees capable of commercializing a Novel Development covered by a patent owned by KOPPERS. In the event KOPPERS fails to commercialize the principally claimed subject matter of any patent covering a Novel Development within a period of seven (7) years from the date of issue of said patent, KOPPERS will assign all rights to said patent to UNIVERSITY upon request, subject to an irrevocable, nonexclusive, royalty-free license to KOPPERS to make and use, but not for production or sale, the subject matter of said patent.

4.2 In the event KOPPERS is in the midst of preparation of a Novel Development for commercialization but has failed to effect actual commercialization by the end of said seven-year period, KOPPERS shall have an option of subsequent one-year extensions to the seven-year period in which to effect commercialization, provided a showing can be made by KOPPERS of good faith preparations toward commercialization, such one-year extensions being limited to a maximum of three (3) after said seven-year period.

5.0 ROYALTY INCOME

5.1 KOPPERS shall pay to UNIVERSITY a reasonable, earned royalty under the claims of a patent which issues

upon a Novel Development assigned to KOPPERS. Said royalty will be based upon a portion of the selling price to the customer, f.o.b. point of manufacture, which portion is attributable to the presence of the claimed subject matter, that is, a machine, article of manufacture, product made by a process, or composition of matter, defined by the claims of the patent. Where the claimed subject matter relates to a process or method practiced under claims of the patent, said royalty will be based upon a portion of the net savings attributable to implementation of said process or method.

5.2 KOPPERS and UNIVERSITY shall negotiate in good faith the amount of said earned royalty of Section 5.1, said amount not to exceed five percent (5%) of said portion of said selling price of said machine, article of manufacture, product by process, or composition of matter; for a process or method practiced under the claims of a patent, a comparable fair and equitable royalty will be negotiated.

5.3 KOPPERS shall pay to UNIVERSITY fifty percent (50%) of any income, such as an initial payment, paid-up royalty, or running royalty, for any and all licenses and sub-licenses granted by KOPPERS.

5.4 All royalties due to be paid by KOPPERS to UNIVERSITY in any year will be subject to a setoff, up to a maximum of fifty percent (50%) of cumulative annual royalties, for every year until the funds provided by KOPPERS under Section 1.0 are reimbursed to KOPPERS.

5.5 KOPPERS shall receive fifty percent (50%) of any income, such as an initial payment, paid-up royalty or running royalty, which accrues to UNIVERSITY under any license to a third party related to a Novel Development or under a patent thereon, the title of which has passed to UNIVERSITY from KOPPERS.

5.6 Royalties due to be paid by UNIVERSITY to KOPPERS in accordance with Section 5.5 are subject to a setoff for costs incurred by UNIVERSITY for filing, prosecution and maintenance of the patent under which royalties are payable.

6.0 PUBLICATION RIGHTS

6.1 UNIVERSITY shall have first rights to publication of materials containing technical information produced by the research activities in the Field of Endeavor, provided UNIVERSITY recognizes that KOPPERS may elect to exercise its rights to file applications for patent upon any Novel Development derived from the research activities in the Field of Endeavor and that the exercise of such rights may result in publication of portions of the research activities before publication rights are exercised by UNIVERSITY.

6.2 UNIVERSITY shall not exercise first right to publication unless UNIVERSITY furnishes to KOPPERS a complete copy of the materials to be published, whether publication is to take place by oral presentation or in printed matter, at least ninety (90) days prior to submittal of the materials to the proposed publisher. KOPPERS agrees to review and within sixty (60) days of receiving said materials present UNIVERSITY with any objections to portions of said materials which may prejudice or jeopardize potential patent rights of KOPPERS. UNIVERSITY agrees to defer publishing any portion of said materials to the extent necessary for KOPPERS to protect its patent rights elected for pursuit under Section 3.0, but in no event shall UNIVERSITY be obligated to defer publication beyond the filing date of the latest-filed foreign-filed patent application relating to the materials for publication.