June 22, 1959

Mr. B.Turner
Ethyl Corporation
100 Park Avenue
New York 17, New York

Dear Bynum:

I am sending you herewith a brief memorandum with some financial data that, to me, seems pertinent to the matter which I discussed with you briefly on the 27th. Incidentally, I was kept so busy in California that I had no chance to prepare anything for your use at the June meeting of the Board of Directors of the Corporation, and I considered it unwise and unfair to send you a hasty and ill-considered letter.

I have tried to be brief and to the point in the memorandum and to support my request of the Board, through you, with statements of fact and supporting data. I have taken for granted your familiarity with the general activities and functions of the Laboratory, as well as its place in the sun in the field of Occupational Medicine, both in research and professional training. More could be said, no doubt, but I do not like the idea of blowing our own horn , for among friends and associates in an enterprise of this sort, an elaborate memorandum, setting forth the details of our activities, would have some such sound.

On the other hand, I send to you, as a supplement to the memorandum, for your own information (if you have time to read it) and for any other use that it may be to you, a fairly brief historical statement, in which are set forth the main facts of the background and activities of the Laboratory.

I appreciate very much indeed your expression of your personal approval of my proposal, and I hope it will be looked on favorably by your associates on the Board. In connection with the possible feeling on the part of the Board that this activity may continue indefinitely to make demands upon them, I think I might point out that this is not so much the expansion of our activities, but the modification of them to meet the specific requirements of industry in certain directions. In effect, it is the rounding out of activities in which we have been too little represented in the past.

Moreover, with this extension of our building, we have acquired just about all of the space that can be granted to us in this medical center. There is, in fact, no space remaining. We have planned with great care, therefore,

to make as effective use of it as possible.

This, I think, covers the situation as well as I can, and I put the matter in your hands.

Sincerely yours,

Robert A. Kehoe, M. D.

RAK:ss

Enclosure

BRIEF SUMMARY OF MEMORANDUM

I. Since 1949 need has developed for further facilities because of:-

1. New technological trends in industry, among which those concerned with nuclear radiation have considerable importance, requiring as the creation of a division of biophysical research

2. Intensification of industrial chemical development and production, together with tightening of regulatory mechanisms, requiring a great increase in the scope, and fairly radical change in the procedures of toxicological research.

3. Requirements of collaboration in work of local government. The provision of facilities for forensic medicine (pathology and toxicology) as the armamentarium of the Coroner of Hamilton County, at the expense of Hamilton County for rental of a space for at least ten years, has been implemented by an appropriation of $200,000 toward the cost of these facilities, these to be owned, however, by the University of Cincinnati.

II. The requirements of Ethyl Corporation during the past two years has put some strain on the Laboratory and threatens to occupy an undue proportion of the toxicological facilities. It is believed that these requirements will continue for years to come, and that the ability of the Laboratory to meet some reasonable proportion of the needs of other industrial sponsors (and so to broaden the bases of both research and financial support thereof) depends upon the early enlargement of the facilities.

III. Additional facilities designed to meet present and anticipated needs are estimated to cost approximately $1,200,000. These involve an additional space of approximately 40,000 square feet at a cost, together with basic, fixed equipment, of $30.^{00}$ per square feet.

IV. The share of Ethyl Corporation toward the provision of these additional facilities, by themselves, could be estimated at $340,000 in terms of the projected and probable share of the Corporation in their use for research and for housing the Medical Department. In view of the previous history of the Laboratory, and the contribution of financial, technical and moral support made by Ethyl Corporation over the years, toward its development, it is suggested that a contribution of $175,000 might be equitable. On the basis of the composite of sums which may reasonably be set opposite the names of other industrial sponsors, and which, in some part, have met with favorable consideration, it is believed that the necessary funds can be obtained in rough accordance with our estimates. If Ethyl Corporation should believe it wise, in its own interest, to limit somewhat the breadth of the base of general industrial participation in this project, no objection in principle is offered at this time to a contribution beyond the sum suggested. Indeed the suggestion is intended merely as indication of one view of the matter, and not an a policy of the University of Cincinnati. The officials of the University, as well as, and in particular, the Director of the Kettering Laboratory, have only the highest respect for

the policies of Ethyl Corporation, in its relations with the University, as they have been expressed and carried out over the years.

Robert A. Kehoe, M.D.
Director, The Kettering Laboratory

Date: June 22, 1959

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MEMORANDUM ON NEED FOR ADDITIONAL SPACE AND FACILITIES IN THE KETTERING LABORATORY

During the period since 1949, when the last prior major addition to the Laboratory was completed, there have been several developments which have added to the need for further facilities and have created new demands. Indeed, with the completion of the new wing in 1949, the requirements for space, which had continued to develop during World War II but could not then be met, had reached such a point that when new space had been provided it was fully occupied at once. Nothing of significance, by way of space available for anticipated developments, remained unoccupied. This, has not, until recently, been a serious handicap, for it necessitated the most economical use of the space and other facilities, and prevented any trend in the direction of extravagance. This point is referred to thus early in this memo for the good reason that the recent sharp increase in attention paid to occupational health within industry and in other universities has provided a degree of "competition" in the field of research and graduate instruction, which has not been encountered previously by The Kettering Laboratory. It is clear, from this and other reasons, that its operations must be conducted with efficiency and economy, as well as with the productivity which, we believe, it has shown in the past.

The principal developments which have influenced our activities and have called for additional facilities, are the following:-

1. New technological trends in industry. The applications of new types of energy in industrial production have created new hazards, the elucidation and control of which are in the realm of biophysics. At the same time, the use of physical tools (radioisotopes etc) in the Laboratory has developed to a point that makes mandatory their further use in the

elucidation of biochemical and toxicological problems. The Laboratory has found it necessary, therefore, to establish and implement a division of biophysics, within which the physical and biological techniques concerned with noise, high frequency radiation, atomic radiation, can be applied with safety and increased scope.

2. Intensification of old technological trends, with modification. Through further rapid strides in industrial chemistry, many new materials and processes have come into existence. These, in themselves, multiply occupational and public hazards, and require extensive facilities for toxicological investigation. In addition, the concern of our informed people (and some uninformed, or insufficiently informed people, as well) about the threats offered by modern technological developments to the health of both the working and the general population, has undergone a great increase in recent years. This has intensified the demand for research, and has altered its quality, with both beneficial and detrimental effects. On the one hand, the need for improvements in the practice of industrial medicine and hygiene has required that the scope and depth of research in industrial toxicology be increased. The mechanisms of action of injurious agents, both chemical and physical, must be explored and elucidated, and not merely cataloged by their capacity to cause injury and death.

On the other hand, the powers and responsibilities of certain governmental agencies, notably the Food and Drug Administration, have been expanded greatly by legislation, and this expansion of responsibility has been translated into an elaborate set of specifications for the investigation of the hazards which reside in the additives to food or to the contaminants of food. That some such development was inevitable is somewhat beside the point of these remarks. The fact is that the present detailed specifications of F.D.A. increase enormously the demand for facilities for toxicological

investigations, and greatly multiply the expense of industrial operations in relation to the production, preservation, processing, packaging and distribution of food in the U.S.A. We are caught in this situation, and despite the relatively unproductive nature of these investigations, pursued as they now must be, without either imagination or real scientific incentive, we must be prepared to meet some of the needs of our industrial sponsors. The demand for facilities in this phase of our work is great, in that elaborate feeding experiments carried out with large (prescribed) numbers of animals, tie up expensive space (which must be meticulously sanitary and well air-conditioned) for two or more years at a time.

3. Adaptations to other needs of the local community.

Some years ago, certain of the facilities of The Kettering Laboratory were made available to the government of Hamilton County. The chief of the division of pathology, at the request of the County Coroner, became the Coroner's pathologist, and the toxicological facilities, including those concerned with analytical determinations, were put at the disposal (within contractual limits) of the Coroner and the County Prosecutor. This feature of our work, which has served to eliminate the amateurish and political flavor of this type of forensic medicine in Hamilton County, has met with favor, and the County Commissioners have desired to establish adequate physical facilities (morgue, necropsy rooms and instruments, separate, legally privileged facilities for toxicological investigation, and administrative offices) in the Kettering Laboratory at their expense (the capital sum of $200,000.00 in lieu of rental for 10 years has been made available to the University of Cincinnati, whose property these facilities will be.)

The developments referred to above have created an immediate need for additional facilities, which have been worked out with an architect, in collaboration with responsible representatives of the University of Cincinnati. The north-south wing of the present building is to be extended southward for an additional 140 ft. Five floors (approximately 40,000 sq.ft) in harmony with the present structure of the laboratory (but with certain economical features) will be built at an estimated cost of $30.^{00}$ per sq.ft., including the cost of air conditioning equipment and certain other items of fixed, operating equipment. (Since all space (cost of 3 floors) set aside for animals and for experiments involving animals must be designed to maintain very nearly ideal environmental conditions, all of the space, with the exception of certain specific technological laboratories, will be air-conditioned.)

With specific reference to the situation of Ethyl Corporation in this development, certain facts and suggestions are incorporated in one of the attached sheets of financial data. An additional point may be made, in that the requirements of Ethyl Corporation, in connection with the development of new products and the exploitation of certain others, have put a heavy burden on the Laboratory during the past two years, and especially in 1959. The work now in progress could be expanded or expedited to absorb most of the personnel and facilities of the toxicological division. This, obviously, would not be wise, but if it is to be avoided now and in the future, we must have some margin of resources that will enable us to respond to the sudden or unforeseen requirements of our sponsors. There seems little likelihood that such demands on the part of Ethyl Corporation will diminish during the next ten years or more, if the history of these developments repeats itself or follows any sort of comparable trend. Basic information as to the role of

certain metallic elements and compounds discharged into the atmosphere from various types of fuel-burning equipment will be required as background for the public safety in connection with the use of these materials. In addition the continuing search for new chemical products, and the development of these products will keep us (or some other investigative group) occupied to a very considerable extent. We might anticipate that no less than one-fourth of the facilities of the Laboratory would be engaged in work for Ethyl Corporation for years to come, and that approximately one-fourth of its budget would derive from that source. On this basis, one might believe that one-fourth of the cost of the additional facilities should be allocated to Ethyl Corporation. It is not through any wish or need on the part of the Director of The Kettering Laboratory (or on the part of the University Officials) to avoid any undue influence on the scope of the activities of The Laboratory which might be exercised by Ethyl Corporation, that the suggestion has been made that Ethyl's share in the financing of the further facilities may well be significantly less than one-fourth. Rather, it is because of the recognition of the beneficial role that Ethyl Corporation has played in the past, that it has seemed equitable to broaden the base of the financial support derived from industry, and to lighten somewhat, the proportional burden on Ethyl Corporation at this time. If Ethyl's officials should feel that this is unnecessary, or that the Corporation would prefer not to diminish its stake in the Laboratory (and perhaps its right to call upon the Laboratory, in need, although it does not follow that this right would be diminished), no possible exception could or would be taken to their view and its implementation. The suggestion which has been offered as to the allocation of cost to the present sponsors of The Laboratory would be

totally uncalled for were it not that some basis for allocation is required for our own purposes in assembling the funds which would appear to us to be required to accomplish our purpose.

Robert A. Kehoe, M. D.
Director of The Kettering Laboratory

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