UCRL-16400

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PROBLEMS IN INTERLABORATORY COLLABORATION

Berkeley, California

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Talk presented at the U.S.-Japan Scientific Information Conference, September 19, 1965, Tokyo, Japan

UCRL-16400

UNIVERSITY OF CALIFORNIA

Lawrence Radiation Laboratory

Contract No. W-7405-eng-48

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1965

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There are serious obstacles to effective interlaboratory collaboration in the exchange of pure materials and standards. Unless prior arrangements have been made and definite contact persons have been designated, requests for materials or information may often go unanswered, may be answered incompletely, or may be answered at too late a date because of the press of other duties upon the person to whom the request has been directed.

Also a person in Japan, for example, may not know which laboratories or which persons in the laboratories may have the information that he seeks. Even if he writes to the correct laboratory, the person that he contacts may not know what is available in his own laboratory and may not provide correct information.

It is important that there be a central coordinating organization such as the Research Materials Information Center at Oak Ridge to which an inquiry could be directed. For such an information center to be effective, it is important to insure that all laboratories in the country keep the information center up to date on what materials they might have available. This is not the situation at the moment even in the United States, and wider publicity is needed to insure that full information will be provided to the information center.

It is especially important for University laboratories to pass on information on samples they are preparing, because usually excess material is not made unless a need for it is known before the preparation is completed. Commercial laboratories will undoubtedly become more important as sources of pure materials, and they will be interested in advertising the availability of their materials. However, it would be important for them to indicate what variations they are prepared to handle. There are often frustrations due to lack of proper communications between users and suppliers in regard to reaching a satisfactory compromise between what can be used and what can be supplied. One of the causes of difficulty is due to lack of suitable analytical facilities at the place of production of the material to insure that satisfactory purity has been achieved. Sometimes the difficulties are due to lack of agreement between different methods of analysis or even the same method of analysis used in different laboratories, and it is important that different laboratories test their analytical procedures on portions of the same preparation to help standardize analytical procedures.

Laboratories should be urged to make much larger amounts of unique preparations that might be needed for their own measurements. The value of the original measurements on the sample could be considerably increased if other types of measurements were made on the same material. Often the direction of a research project is determined by what materials may be available and knowledge that well characterized materials on which some types of measurements have already been made will lead to additional work on the same material.

Exchange of senior investigators, post-doctoral fellows, and even trained technicians can be very useful in spreading information on methods of preparing well characterized materials and on methods of analysis to establish the character of the material. As one illustration, the Lawrence Radiation Laboratory has developed a table-top accelerator which has been specifically designed for analysis of C, N, and O by He^3 activation. This method has been used to detect parts per million of these light elements, and, in principal, the ultimate sensitivity is in parts per billion. Visitors from other laboratories would be encouraged to spend enough time to become acquainted with the method and the design of the small accelerator so that they could go back to their own laboratories and set up similar facilities. Laboratories in both Japan and the United States would benefit considerably by exchanges of scientists to spread knowledge of new techniques.