
Preface

This report concerns genetic engineering and waste treatment. It is the result of a planning study performed for the United States Environmental Protection Agency's Advanced Environmental Control Technology Research Center at the University of Illinois. The purpose of the study was to provide background information to a broad group of scientists, engineers and decision makers, so that opportunities for the improvement of biological waste treatment could be identified and evaluated. The report offers a core of information drawn from a very wide range of disciplines relevant to the genetic approach to new pollution controls. It identifies policy issues, research problems and scientific resources that bear on pollution abatement through genetic engineering.

In addition to assessing the potential for developing new pollution treatments, this report is intended to promote interdisciplinary communication among the specialized scientists and research managers engaged in such developments.

In so doing, the report intends to diminish one of the main impediments to the development of practical improvements in biological pollution treatment. Interdisciplinary communication is promoted by including background subsections describing basic disciplinary problems, techniques and other relevant information. The glossary and index should also be helpful.

It is believed that the information in this report will be particularly useful to professional engineers and research managers involved with pollution treatment problems. Molecular biologists may also find the background information in this report to be useful, especially the parts dealing with biological waste treatment, the natural limits to biodegradation and the establishment of microorganisms in the environment. Throughout this report, an effort has been made to provide references to relevant review literature, as well as to selected primary reports of use to specialists.

Because of the dynamic nature of the subject, this report cannot be considered to be comprehensive or complete. New questions continue to arise as pollution problems are recognized and as the technology of gene and microbe manipulation opens up new possibilities for addressing old problems. This report provides a reasonable outline of the state of the subject in mid-1983. It should be considered a guide for planning current work, hopefully to bring to practice the advanced pollution abatements that are the promise of the new genetic technologies.

NOTICE

Although the information described in this report has been funded wholly by the United States Environmental Protection Agency under assistance agreement EPA Cooperative agreement CR 806819 to the Advanced Environmental Control Technology Research Center, it has not been subjected to the Agency's required peer and administrative review and therefore does not necessarily reflect the views of the Agency and no official endorsement should be inferred. Mention of trade names or commercial products does not constitute endorsement or recommendation for use by the Agency, the authors, or the publisher.