

Preface

THE RISK ASSESSMENT PROCESS has received increased attention over the past few years. The National Research Council, the U.S. Congress, and numerous international bodies have all discussed its importance. There are considerable uncertainties with the probabilistic estimates of risk. Risk assessments consist of many components involving several scientific disciplines. Exposure assessment is often the weak link in risk assessments. While a treatise on exposure assessment is outside the scope of this volume, measurements of concentrations in environmental media and in biological fluids and tissues are important cornerstones. These measurements are often expensive and time-consuming. We need accurate, quick, and cost-effective measurement techniques. In addition, we need interpretive methods to assess exposure and risk to xenobiotics.

Public concerns about agrochemicals and toxic substances are great. The media frequently report on these areas, alerting people to newly perceived dangers, both real and imagined. The public finds pesticides in food products and in drinking water especially disconcerting. For example, we have grown more aware of the role of agrochemicals as possible endocrine disruptors.

Biomarkers and biomonitoring, the subjects of this volume, offer exciting opportunities to understand more completely environmental, chemical, and physiologic processes by providing useful measures of chemicals and their breakdown products. Many chapters in this volume show and discuss such new methods and their field applications. However, to take full advantage of any new measurement or monitoring strategies, we should understand all the mechanistic processes. Full understanding is not always possible; progress is made in stages.

This volume was developed from the work presented at the 209th National Meeting of the American Chemical Society, titled "Biomarkers for Agrochemicals and Toxic Substances," sponsored by the Division of Agrochemicals, in Anaheim, California, April 2–7, 1995. It focuses not only on measurement techniques and applications but also on new and innovative thinking regarding the interpretation of measurement results. Several chapters deal with the application of results to the exposure and risk assessment process. Other chapters discuss new physiologic end points as markers of exposure and effect. This integrated picture is more fully discussed in the first chapter.

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