Linking Sediment Exposure with Effects: Useful Laboratory and Field Assessment Techniques (Déjà vu?). G. Allen Burton and William Nelson. Wright State University, Dayton, OH and U.S. EPA, Narragansett, RI.

Accurate assessments of sediment risk or hazard are not possible without thoroughly characterizing and linking exposure and effects. The laboratory and field tools and study designs exist to meet this challenge, but must be integrated into a weight-of-evidence (WOE) framework that is quantitatively based. Laboratory extrapolations must be validated with empirical, site-specific data. The important elements for accurate assessments have long been recognized (e.g., Pellston Wkshp 1995), yet seldom employed. The strengths and limitations of the various laboratory and field-based lines of evidence (LOE), their predictability and importance in the ERA process will be presented. Site-specific applications will be described demonstrating optimal study designs for addressing project goals where spatial and temporal characterizations of exposure and effects are conducted in a WOE approach. Discussion issues will focus on improved ways to integrate LOE, defining conceptual models linked to assessment/measurement endpoints, improving our understanding of mechanistic relationships, quantitative WOE, and moving the ERA process forward in a "big picture" plan that involves all interested parties.