

Behavioral Science as a New Frontier for Transformational Advances in Exposure Science

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The text of the abstract is limited to 2,000 characters, including spaces (approximately 300 words).

Presenter: Tim Buckley

Abstract:

Over the last 40 years, tremendous progress has been made toward protecting our life-sustaining resources of air, water, and land and improving ecosystems and public health despite increasing population pressures. Many disciplines have provided the scientific underpinnings for this progress, but perhaps none have been more influential than exposure science. Exposure science has fostered a *receptor*- rather than *source*-based perspective regarding strategies for monitoring and controlling pollution to protect public health and the environment. We have achieved many gains through control of far-field sources. Near-field sources related to consumer products and activities in the home, vehicle, school, and work environments present the next challenge. These near-field sources tend to dominate our exposures and are direct results of our behaviors in purchasing and using consumer products. Therefore, these types of sources are less amenable to traditional regulatory approaches for exposure reduction. Behavior determines not only the presence or absence of consumer product and use, but also the details that largely define critical chemical exposure metrics including amount, concentration, frequency, duration, and pathway of exposure. Thus, it is becoming increasingly evident that in order to both predict and control near-field chemical exposures, we need to better understand human behavior and the knowledge, attitudes and beliefs that underlie consumer product related decisions. In this presentation, we will argue for the development of *Behavioral Exposure Science* to strategically address environmental health needs of the 21st Century. We will provide a conceptual framework showing linkages with related fields (e.g. risk communication), discuss historical examples, and propose a general line of research that will establish the relevance and impact of behavioral exposure science for the protection of public health and the environment.