

SUGGESTED FUTURE CONFERENCE TOPICS
JUNE 2004 – DECEMBER 2005

The following areas have been identified as areas of high priority to the Superfund Basic Research Program (SBRP). Conference requests that do not fall into any of these following categories will receive lower priority for funding unless you successfully justify the importance of your conference.

SPATIAL ANALYSIS FOR HEALTH PROTECTION AND RISK ASSESSMENT

Risk assessment scientists depend on a quantitative understanding of exposure pathways to individuals or populations in order to evaluate the potential for adverse health effects or to developing plans for primary prevention. SBRP grantees and other scientists that are engaged in research and development of geographic and statistical methods that may address this requirement might consider themes such as:

- Development and use of geostatistical, statistical, or GIS methods to estimate dose or exposure in space and time at hazardous waste sites
- Application of epidemiological, molecular epidemiological, or ecological approaches at hazardous waste sites

REMEDIATION

Developing innovative technological processes to reduce contamination in soil, sediments and groundwater. Conferences that highlight the latest in technological advances and translational research are encouraged, and topics for consideration include but are not limited to:

- Bioremediation/biodegradation specific to soils and sediments or groundwater
- Physical and/or chemical remediation: such as thermal remediation
- Technology transfer (possibly as a collaboration with EPA's Technology Innovation Office)

HEALTH EFFECTS

Many Superfund-related studies focus on the impact of environmental contaminants on organ systems. Conferences that would bring together experimentalists in the areas of neurotoxicology, immunology or reproductive toxicology could include the following topics:

- Impact of environmental agents on the function of neurons, neuroreceptors and neurotransmitters
- Effects of exposure on:
 - Developmental and reproductive health
 - Immunological systems
- Biochemical and molecular basis for disease
- Neurodegenerative diseases

METALS

The metals research being conducted by the SBRP crosses all disciplines of science - from molecular mechanisms of toxicity and carcinogenicity to molecular epidemiology to fate and transport and bioavailability. A major conference in the area of metals would be timely and appropriate for the Program. Suggested focus for conferences could include but not is limited to:

- Metal interactions in mixtures (metal/metal/metalloids interactions; metal/organic interactions)
- Metal sediments and sequestration
- Exposure assessment
- Recent advances from epidemiological studies of arsenic

DERMAL EXPOSURE

A number of activities at hazardous waste sites may result in dermal contact and exposure to hazardous substances through dermal or transdermal pathways. Dermal pathways are a major source of variability and uncertainty in the evaluation of risks at Superfund sites. Dermal risk assessment guidance draws upon empirical, modeled, and theoretical approaches for hazard identification, exposure assessment, and toxicity assessment. EPA seeks additional information on screening and quantitative risk assessment. Participants might include those who have been studying dermal structure/function, internal dosimetry, exposure modeling, workplace and consumer dermal exposures, drug delivery, etc. Topic areas might include:

- Systemic chronic health effects resulting from low dose long-term exposure
- Development of dermal absorption and bioavailability models of exposure
- Dermal effects such as allergic contact responses or urticarial reactions

EXPOSURE ASSESSMENT

Nationally, large numbers of people live in close proximity to hazardous waste sites, but individual sites generally impact only small populations. Thus, traditional statistically based approaches that might link exposures to contaminants to disease incidence, or that might demonstrate the efficacy of remediation or intervention in lowering contaminant doses, may lack power or yield ambiguous results. At the same time, it is critically important to be able to communicate to communities and site managers at an individual site the degree of confidence in risk assessments and the impact of remediation on exposure. Examples of topics of interest might include:

- Use of biomarkers of exposure and effect or biological samples in site-specific decision making
- Value of information provided by measured biomarkers of exposure, and methods of increasing their value
- Integrated measures of dose, does the biomarker really reflect exposure from multiple routes and multiple media? Scientific approaches to test this hypothesis
- Communicating risks: reconciling the "stories" of environmental measurements, biological measurements, and modeled outcomes
- Utilization of advanced technologies for exposure assessment

BIOAVAILABILITY

Bioavailability remains an area of emphasis to both the SBRP and EPA. Studies ranging from fate and transport models to bioaccumulation and biomagnification in food chains to determining the relationship between the environmental concentration, speciation and dose internalized are all important in understanding the bioavailability of a contaminant. Although the SBRP previously supported a conference on bioavailability, we encourage additional workshops or conferences in focused areas such:

- Fate and transport models and its validation
- Ecology
- Bioavailability and human health
- Soil ingestion

SITE CHARACTERIZATION

Cost effective methods to assess contaminants at hazardous waste sites before and after cleanup is important to risk management practices. Meetings that focus on state-of-the-art technologies for site characterization both from technological approach and assessment of health benefits are of interest.

- Satellite imagery
- Nanotechnology and other advanced technologies for continuous site monitoring

ECOLOGY

Research on the effects of hazardous substances on ecological systems and their subsequent impact on human health is an important area of study for the SBRP. Suggested topic areas include:

- Changes in aquatic environment and human health implication
- Resistance and resilience to the impact of toxins on ecosystems
- Understanding the implications of toxins on the food web

PEDIATRIC ENVIRONMENTAL HEALTH

Understanding the effects of exposures to environmental contaminants on children continues to be of priority to the SBRP and EPA. This includes understanding cancer susceptibility from early-life short-term chemical exposures, relative to susceptibility from exposures of similar duration later in life. Conferences that focus on the unique aspects of children's health and sensitivity to environmental agents are sought. Coordination with Pediatric Environmental Health Specialty Units is encouraged. Topics could include but not be limited to:

- Pediatrics and environmental medicine
- Exposure assessment in children
- Epidemiology studies
- Biochemical and/or molecular studies

FATE AND TRANSPORT

The SBRP supports research projects focusing on the fate and transport of chemicals through various media from waste sites. There have been no recent conferences that have focused specifically on fate and transport issues. It seems timely to critique the emerging models and their application in field studies.

WASTE MANAGEMENT

The communication of waste management strategies and multidisciplinary research approaches serve as models for other nations developing hazardous waste programs. Conferences that foster an international exchange of information and technology transfer are encouraged.