Use of Emerging Science and Technologies to Explore Epigenetic Mechanisms Underlying the Developmental Basis for Disease

JULY 30-31, 2009
Objective of the Workshop

…to gain understanding of what research is most needed to inform public-health decision-makers about chemicals that cause epigenetic effects.
Epigenetic Changes

- Chromatin Re-arrangement
- Histone methylation/acetylation
- DNA methylation

What are the health implications of these so-called “epigenetic” changes?
**Questions**

- Are screening tests or transgenerational animal bioassays needed to detect such effects, and if they are, what specifically they would look for?
- Are humans more sensitive to such impacts during particular developmental periods?
- How much agreement is there about the importance of such effects?
- How much morbidity and mortality might they account for?
- Are they reversible?
- Does available science tell us whether these effects occur in humans or whether they persist transgenerationally in humans?
Focus

- Observations that raise concern about epigenetic changes
- Existing, emerging, and yet-unidentified tools for screening chemicals for such effects
- The most pressing needs for research to improve the state of the science
- Implications for risk practitioners and regulatory decision-makers
- Strategies for communicating emerging conclusions to the public