

2017–2018 Activities and Accomplishments

Committee leaders:

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This scientific program is committed to:

- Examining gut microbial-host dynamics to understand how the gut microbiome affects human health and xenobiotic toxicity.
- Identifying biomarkers from this interaction that contribute to or result from disease or organ damage.

Areas of scientific focus:

- Alterations of the microbial community structure and microbiome function
- Endogenous microbial metabolites
- Microbiota metabolism of exogenous compounds

Why get involved?

- Participation in the Microbiome Subcommittee offers the opportunity to a build multi-disciplinary forum to address key questions related to microbiome metabolites as translational biomarkers of disease and toxicity and to drive the research to apply the microbiome in safety assessment.

Key accomplishments:

- Established a committee of tripartite members with expertise in microbiology and toxicology.
- Identified key research needs and gaps based on a committee-wide survey, including microbial metabolism and biotransformation of xenobiotics, specific markers of toxicity and chemical adversity, effects of key factors (e.g., age) on animal models, human susceptibility, and standardizing fecal collection and analysis.

The Committee's focus for May 2018–May 2019:

- The committee will host a two-day workshop in June 2018 to address the state of the science of gut microbiome research in respects to biotransformation, animal modeling, biomarkers of toxicity and disease, markers of adverse effects, and human susceptibility.
- The committee will continue engaging public and private partners to carry out the research goals identified at the workshop.

2017–2018 Participating organizations

ApconiX
Astellas Pharma
Baylor University
Boehringer Ingelheim
Center for Drug Evaluation and Research
Center for Food Safety and Applied Nutrition
Charles River Laboratories
Cornell University
Dow Dupont
Indiana University
Lexicon Pharmaceuticals
Medical University of South Carolina
Monsanto
National Cancer Institute
National Centre for the Replacement, Refinement, and Reduction of Animals in Research (NC3Rs, UK)
National Center for Toxicological Research
National Heart, Lung, and Blood Institute
National Institute for Public Health and the Environment (RIVM, The Netherlands)
National Institute of Allergy and Infectious Diseases
National Institute of Environmental Health Sciences, National Toxicology Program
National Institutes of Health, Office of the Director
National Institute of Standards and Technology
Public Health England
Taconic Biosciences
University of Arizona
University of California, San Diego
University of Connecticut
University of Missouri
University of Texas Medical Branch
US Army
US Food and Drug Administration

For more information, contact the Committee's manager, Dr. Connie Chen, cchen@hesiglobal.org.