Trust Your Gut: Establishing Confidence in Gastrointestinal Models

An Overview of the State of the Science and Contexts of Use

John Edward Porter Neuroscience Research Center, National Institutes of Health

Time (EDT)	**Workshop Day 1** **Wednesday, October 11, 2023**
8:30 am – 9:00 am	**Check-in (in-person attendees)**
9:00 am – 9:10 am	**Welcome** *Dr. Nicole Kleinstreuer, Director, NICEATM*
9:10 am – 9:35 am	**Evaluation of Human Intestinal Epithelium in an MPS Platform as an In Vitro Model for Drug Absorption** *Dr. Ye Eun Jeong, ORISE Post-Doctoral Fellow, FDA*
9:35 am – 10:00 am	**Evaluating the Technical Quality of a Triculture Gut Model to Test Particle Permeability** *Dr. Elijah Petersen, Research Scientist, NIST*
10:00 am – 10:25 am	**Using Caco-2 Permeability to Estimate Oral Bioavailability for Environmental Chemicals** *Dr. Elaina M. Kenyon, Research Toxicologist, EPA*
10:25 am – 10:40 am	**Break**
10:40 am – 11:05 am	**Biopsy-Derived Human Intestine-Chips to Investigate Region-Specific Barrier Responses** *Dr. Ville Kujala, Director, Discovery Biology, Emulate Inc.*
11:05 am – 11:30 am	**Development and Implementation of Primary Human Intestinal Organoid Models for Gastrointestinal Toxicity** *Dr. Julia Co, Principal Scientist, Genentech*
11:30 am – 11:55 am	**Characterization of a Human In Vitro Intestinal Model for the Hazard Assessment of Engineered Materials** *Dr. Christie Sayes, Associate Professor, Baylor University*
11:55 am – 12:00 pm	**Wrap-up / Adjournment** *Dr. Nicole Kleinstreuer, Director, NICEATM*
12:00 pm – 1:00 pm	**Lunch Break**
1:00 pm – 5:00 pm	**Closed Meeting: Breakout Group Discussion**

CAAT = Center for Alternatives to Animal Testing; CCTE = Center for Computational Toxicology and Exposure; EPA = U.S. Environmental Protection Agency; FDA = U.S. Food and Drug Administration; MPS = microphysiological system; MRC = Medical Research Council; NICEATM = National Toxicology Program Interagency Center for the Evaluation of Alternative Toxicological Methods; NIST = National Institute of Standards and Technology; ORISE = Oak Ridge Institute for Science and Education; USU = Uniformed Services University

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Time (EDT)	**Workshop Day 2** **Thursday, October 12, 2023**
8:30 am – 9:00 am	**Check-in (in-person attendees)**
9:00 am – 9:10 am	**Welcome** *Dr. Thomas Hartung, Director, Johns Hopkins University CAAT*
9:10 am – 9:35 am	**Modeling Oral Bioavailability of Environmental Chemicals** *Dr. John F. Wambaugh, Research Physical Scientist, EPA/CCTE*
9:35 am – 10:00 am	**A Three-Layer Intestinal Model for Toxin Translocation Studies** *Dr. Angela Melton-Celsa, Associate Professor, USU Department of Microbiology and Immunology* *Dr. Kristin H. Gilchrist, Assistant Professor, USU Center for Biotechnology (4DBio[3])*
10:00 am – 10:25 am	**The Development of a 96-well Plate-Based Model of the Human Intestinal Epithelium with Applications for Modeling Toxicity and Gastrointestinal Pharmacokinetics** *Dr. Bill Thelin, Chief Scientific Officer, Altis Biosystems*
10:25 am – 10:40 am	**Break**
10:40 am – 11:05 am	**Human Stem Cell-Derived Intestinal Organoids as a Tool to Estimate Human Oral Exposure and Presystemic Metabolism** *Dr. Patrik Lundquist, Researcher, Department of Pharmacy, Uppsala University*
11:05 am – 11:30 am	**What Drugs and Chemicals Do to Our Bugs** *Dr. Kiran Patil, Professor, MRC Toxicology Unit, University of Cambridge*
11:30 am – 11:55 am	**Gastrointestinal Toxicity in Model Animal Species using Organ Tissue Equivalents** *Dr. Colin E. Bishop, Professor, Wake Forest Institute for Regenerative Medicine*
11:55 am – 12:00 pm	**Wrap-up / Adjournment** *Dr. Thomas Hartung, Director, Johns Hopkins University CAAT*
12:00 pm – 1:00 pm	**Lunch Break**
1:00 pm – 4:00 pm	**Closed Meeting: Breakout Group Discussion**

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