Translational Alternative Models and Biomarkers Predictive of Drug or Chemical Cardiovascular Risk

Workshop Agenda

October 10, 2013 (8:00 am–5:20 pm)

7:30–8:00 Registration and Poster Setup

8:00–8:10 Welcome and Introduction
Rick Woychik, PhD, Deputy Director
NIEHS, Research Triangle Park, NC

8:10–8:20 Health Effects Research to Support the Chemical Safety and Sustainability Program at EPA’s National Health and Environmental Effects Research Laboratory (NHEERL)
Ronald Hines, PhD, Associate Director for Health
NHEERL, U.S. Environmental Protection Agency (EPA), Research Triangle Park, NC

8:20–8:40 Workshop Overview
Warren Casey, PhD, DABT (Host and Workshop Co-Chair)
Acting Director, National Toxicology Program (NTP) Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM)
National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC

8:40–10:30 OPENING SESSION

8:40–8:45 Introduction
Syril Pettit, MEM, Executive Director
Health and Environmental Sciences Institute (HESI), Washington, DC

8:45–9:10 Current Regulatory Perspective on Cardiovascular Safety Evaluation
Jean Wu, MD, PhD, Senior Pharmacologist
Center for Drug Evaluation and Research (CDER)
U.S. Food and Drug Administration (FDA), Silver Spring, MD

Kevin Dreher, MS, PhD (Workshop Co-Chair), Principal Investigator
NHEERL, EPA, Research Triangle Park, NC

9:35–10:00 Current European Cardiovascular Safety Regulatory Guidelines
Olavi Pelkonen, MD, PhD, Professor of Pharmacology
University of Oulu, Oulu, Finland

10:00–10:30 Panel Discussion: Drs. Wu, Dreher, and Pelkonen
Syril Pettit, Moderator

10:30–11:00 BREAK — Poster Session
**SESSION 1 — In Vitro Approaches to Assessing Risk of Cardiovascular Toxicity**

11:00–5:20

11:00–11:05  Introduction to Session 1 Part 1
Warren Casey, PhD, DABT, NICEATM

11:05–11:30  Contemporary Pharma Approaches to Cardiac Safety Assessment
Peter Clements, BSc, BVM&S, PhD DipRCPath, MRCVS, FRCPath
Director of Pathology, Safety Assessment Pathology
GlaxoSmithKline, Ware, Hertfordshire, United Kingdom

11:30–11:55  Integrated and Mechanistic Approaches to Cardiac Safety Testing
Norman Stockbridge, MD, PhD, Director
Division of Cardiovascular and Renal Products, Office of New Drugs, CDER
FDA, Silver Spring, MD

11:55–12:20  Cardiac Stem Cells for Chemical Safety Assessment
Mark Mercola, PhD
Professor, University of California, San Diego
Director, Muscle Development and Regeneration Program
Sanford-Burnham Medical Research Institute, La Jolla, California

12:20–1:20  LUNCH

1:20–1:45  Zebrafish as Alternative In Vivo Models for Environmental Exposures
David Volz, PhD, Assistant Professor
Department of Environmental Health Sciences, Arnold School of Public Health,
University of South Carolina, Columbia, SC

1:45–2:15  Panel Discussion: Drs. Clements, Stockbridge, Mercola, and Volz
Warren Casey, Moderator

2:15–2:20  Introduction to Session 1 Part 2
Brian Berridge, DVM, PhD, DACVP, Director
Worldwide Animal Research Strategy
GlaxoSmithKline, Research Triangle Park, NC

2:20–2:50  In Vitro Assays to Assess Xenobiotic and Drug-Induced Vascular Injury
Using Rat and Cynomolgus Vascular Cell Systems
James Turk, DVM, PhD, DACVP, Pathology Director
Amgen, Thousand Oaks, CA

Brian Wamhoff, PhD, Cofounder and Vice President of Research and Development
HemoShear, Charlottesville, VA

2:50–3:15  Organs-on-Chips for Predicting Pulmonary and Cardiac Toxicity and Efficacy
Anthony Bahinski, PhD, MBA, FAHA, Lead Senior Staff Scientist
Biomimetic Microsystems, Wyss Institute for Biologically Inspired Engineering
Harvard University, Boston, MA

3:15–3:45  BREAK — Poster Session
3:45–4:15  Adverse Outcome Pathway for Embryonic Vascular Disruption and Alternative Methods to Identify Chemical Vascular Disruptors
Nicole Kleinstreuer, PhD, Bioinformatics Specialist
Integrated Laboratory Systems (ILS), Inc. (Contractor for NICEATM)
Research Triangle Park, NC
Tamara Tal, PhD, Postdoctoral Fellow
Integrated Systems Toxicology Division, NHEERL
EPA, Research Triangle Park, NC

4:15–4:40  Alternative Methods to Predict Cardiac Teratogenic Properties of Chemicals
E. Sidney Hunter, PhD
Integrated Systems Toxicology Division, NHEERL
EPA, Research Triangle Park, NC

4:40–5:10  Panel Discussion: Drs. Turk, Wamhoff, Bahinski, Kleinstreuer, Tal, and Hunter
Brian Berridge, Moderator

5:10–5:20  Closing Remarks
Warren Casey, PhD, DABT, NICEATM
October 11, 2013 (8:00 am–3:00 pm)

8:00–8:05 Opening Remarks
Warren Casey, PhD, DABT, NICEATM

8:05–9:55 SESSION 2 — In Silico Approaches to Cardiovascular Toxicity Risk
8:05–8:10 Introduction
Jennifer Pierson, MPH, Scientific Program Manager
Health and Environmental Sciences Institute (HESI), Washington, DC

8:10–8:35 In Silico Modeling of Cardiac Function
J. Jeremy Rice, PhD, Research Staff Member
Functional Genomics and Systems Biology Group
IBM, Yorktown Heights, NY

8:35–9:00 Computational Toxicology Approaches to Cardiovascular Safety Assessment
Naomi Kruhlak, PhD, Senior Staff Fellow
Division of Cardiovascular and Renal Products, Office of New Drugs, CDER
FDA, Silver Spring, MD

9:00–9:25 Physiologic Modeling for Cardiovascular Safety at the FDA
Thomas Colatsky, PhD, Director
Division of Drug Safety Research, Office of Testing and Research
Office of Pharmaceutical Science, CDER
FDA, Silver Spring, MD

9:25–9:55 Panel Discussion: Drs. Rice, Kruhlak, and Colatsky
Jennifer Pierson, Moderator

9:55–10:25 BREAK — Poster Session

10:25–3:25 SESSION 3 — Modeling Sensitive or Susceptible Individuals and Populations
10:25–10:30 Introduction
Thomas Colatsky, PhD, FDA

10:30–10:55 Identifying Populations At-Risk of Environmental Chemical-Induced Health Effects
Jason D. Sacks, MPH, Senior Epidemiologist
National Center for Environmental Assessment, Office of Research and Development
EPA, Research Triangle Park, NC

10:55–11:20 Use of Stem Cells Derived from Patient Populations
Craig T. January, MD, PhD, FACC, Professor of Medicine
Cellular and Molecular Arrhythmia Research Program
Division of Cardiovascular Medicine, School of Medicine and Public Health
University of Wisconsin–Madison, Madison, WI

11:20–11:45 Engineered Heart Tissues for Cardiac Safety Studies
Tetsuro Wakatsuki, PhD, Cofounder and Chief Scientist
InvivoSciences, Madison, WI
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| 12:45–1:10   | Heart on a Chip — A Novel Platform for Cardiovascular Preclinical Research  
                Moran Yadid, PhD, Postdoctoral Fellow  
                Disease Biophysics Group, Harvard School of Engineering and Applied Sciences  
                Harvard University, Boston, MA |
| 1:10–1:35    | Evidence-Based Approaches to Toxicology Testing                        
                Thomas Hartung, MD, PhD, Director,  
                Center for Alternatives to Animal Testing, Bloomberg School of Public Health  
                Johns Hopkins University, Baltimore, MD |
| 1:35–2:05    | Panel Discussion: Mr. Sacks and Drs. January, Wakatsuki, Yadid, and Hartung  
                Thomas Colatsky, Moderator |
| 2:05–2:15    | BREAK                                                                   |
| 2:15–2:45    | Final Discussion: Panel members TBD                                   
                Moderator TBD |
| 2:45–3:00    | Closing Remarks and Adjournment                                       
                Warren Casey, PhD, DABT, NICEATM |