Daland R. Juberg1, Susan J. Borghoff 2, Richard A. Becker3, Warren Casey4, Thomas Hartung5, Michael P. Holsapple6, M. Sue Marty7, Ellen M. Mihaich8, Glen Van Der Kraak9, Michael G. Wade10, Catherine E. Willett11, Melvin E. Andersen12, Christopher J. Borgert13, Katherine K. Coady7, Michael L. Dourson14, John R. Fowle III15, L. Earl Gray16, James C. Lamb17, Lisa S. Ortego18, Thaddeus T. Schug4, Colleen M. Toole 19, Leah M. Zorrilla20, Oliver L. Kroner14, Jacqueline Patterson14, Lori A. Rinckel20, and Brett R. Jones20

1 Dow AgroSciences, Indianapolis, IN, USA;
2 ToxStrategies Inc., Cary, NC, USA;
3 American Chemistry Council, Washington, DC, USA;
4 National Institute of Environmental Health Sciences, Research Triangle Park, NC, USA;
5 Johns Hopkins University, Baltimore, MD, USA and University of Konstanz, Germany;
6 Batelle, Columbus, OH, USA;
7 The Dow Chemical Company, Saginaw, MI, USA;
8 ER2 and Endocrine Policy Forum, Durham, NC, USA;
9 University of Guelph, Guelph, ON, Canada;
10 Health Canada, Ottawa, ON, Canada;
11 Humane Society of the United States, Washington, DC, USA;
12 The Hamner Institutes for Health Sciences, Research Triangle Park, USA;
13 Applied Pharmacology and Toxicology, Inc., Gainesville, FL, USA;
14 Toxicology Excellence for Risk Assessment, Cincinnati, OH, USA;
15 Science to Inform, Pittsboro, NC, USA;
16 United States Environmental Protection Agency, Research Triangle Park, NC, USA;
17 Exponent, Alexandria, VA, USA;
18 Bayer CropScience, Raleigh-Durham, NC, USA;
19 Ceetox, Kalamazoo, MI, USA;
20 Integrated Laboratory Systems, Inc., Morrisville, NC, USA

Summary

In 1996, the U.S. Congress passed the Food Quality Protection Act and amended the Safe Drinking Water Act (SDWA) requiring the U.S. Environmental Protection Agency (EPA) to implement a screening program to investigate the potential of pesticide chemicals and drinking water contaminants to adversely affect endocrine pathways. Consequently, the EPA launched the Endocrine Disruptor Screening Program (EDSP) to develop and validate estrogen, androgen, and thyroid (EAT) pathway screening assays and to produce standardized and harmonized test guidelines for regulatory application. In 2009, the EPA issued the first set of test orders for EDSP screening and a total of 50 pesticide actives and 2 inert ingredients have been evaluated using the battery of EDSP Tier 1 screening assays (i.e., five in vitro assays and six in vivo assays).

To provide a framework for retrospective analysis of the data generated and to collect the insight of multiple stakeholders involved in the testing, more than 240 scientists from government, industry, academia, and non-profit organizations recently participated in a workshop titled "Lessons Learned, Challenges, and Opportunities: The U.S. Endocrine Disruptor Screening Program." The workshop focused on the science and experience to date and was organized into three focal sessions: (a) Performance of the EDSP Tier 1 Screening Assays for Estrogen, Androgen, and Thyroid Pathways; (b) Practical Applications of Tier 1 Data; and (c) Indications and Opportunities for Future Endocrine Testing. A number of key findings and recommendations related to future EDSP evaluations emanated from the collective sessions.