

NTP Associate Director's Report

Brian R. Berridge, DVM, PhD, DACVP
NTP Associate Director and
Scientific Director, NTP Division
National Institute of Environmental Health Sciences

NTP Board of Scientific Counselors Meeting
December 12, 2018



Staff Changes – Will Say Goodbye



Molly Vallant, MS

Program Operations Branch
40 years of government service
(retiring Jan 3, 2019)



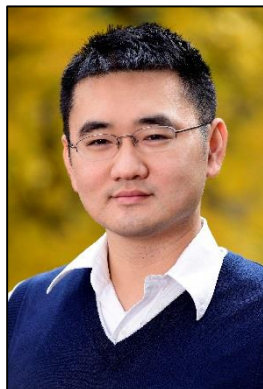
Esra Mutlu, PhD, DABT
Program Operations Branch

Elected Councilor to the Genetics and Environmental
Mutagenesis Society Board of Directors

Earned Diplomate of the American Board of
Toxicology Certification



Staff Changes – New Faces



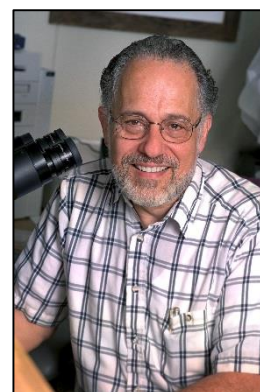
Dr. Yichang (Ian) Chen
NTP Laboratory Branch
Postdoctoral fellow



Dr. Marianna Rosentsvit
NTP Laboratory Branch
Visiting Postdoctoral Fellow



Dr. Dahea You
Biomolecular Screening Branch
Postdoctoral Fellow



Dr. Robert Maronpot
Cellular & Molecular Pathology Branch
Special Volunteer



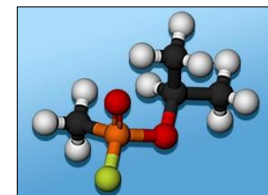
Recent Advisory Meetings

- Peer review of **Draft Report on Carcinogens Monograph on Night Shift Work and Light at Night** – Oct 5, at NIEHS
 - Information about the evaluation, including draft monograph, is available at <https://ntp.niehs.nih.gov/go/717273>
- **Scientific Advisory Committee on Alternative Toxicological Methods Meeting** – Sept 5-6, at NIEHS
 - Meeting materials are available at <https://ntp.niehs.nih.gov/events/past/index.html?type=SACATM>





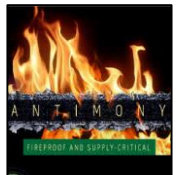
- Released for public comment: **Draft NTP Monograph on Systematic Review of Long-term Neurological Effects following Acute Exposure to the Organophosphorus Nerve Agent Sarin** – Dec 11
 - Deadline for written comment on the draft monograph is Jan 17, 2019
 - Draft monograph is available at <https://ntp.niehs.nih.gov/go/36051>
 - Peer review, anticipated in 1st quarter 2019





NTP Reports – Recent Publications

- **NTP Technical Reports on Radio Frequency Radiation Used by Cell Phones – Rats (TR 595) and Mice (TR 596);** published Nov 1
 - Press release and Factsheet, Nov 1
 - Telephone press conference, Oct 31
 - <https://ntp.niehs.nih.gov/go/cellphone>
- **Report on Carcinogens Monograph on *Helicobacter pylori* (Chronic infection);** published Oct 16
 - <https://ntp.niehs.nih.gov/go/791433>
- **Report on Carcinogens Monograph on Antimony Trioxide;** published Oct 19
 - <https://ntp.niehs.nih.gov/go/809361>

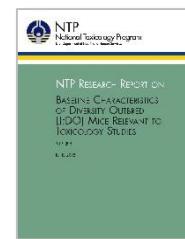
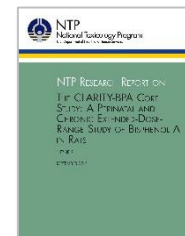




NTP Reports – Recent Publications

NTP Research Reports

- **CLARITY-BPA Core Study, RR-9**; published Sept 2018
 - Publication of report and release of grantees' data
 - <https://ntp.niehs.nih.gov/go/BPA> and
- **Baseline Characteristics of Diversity Outbred (J:DO) Mice Relevant to Toxicology Studies, RR-6**, published June 2018
 - <https://ntp.niehs.nih.gov/go/rr06abs>



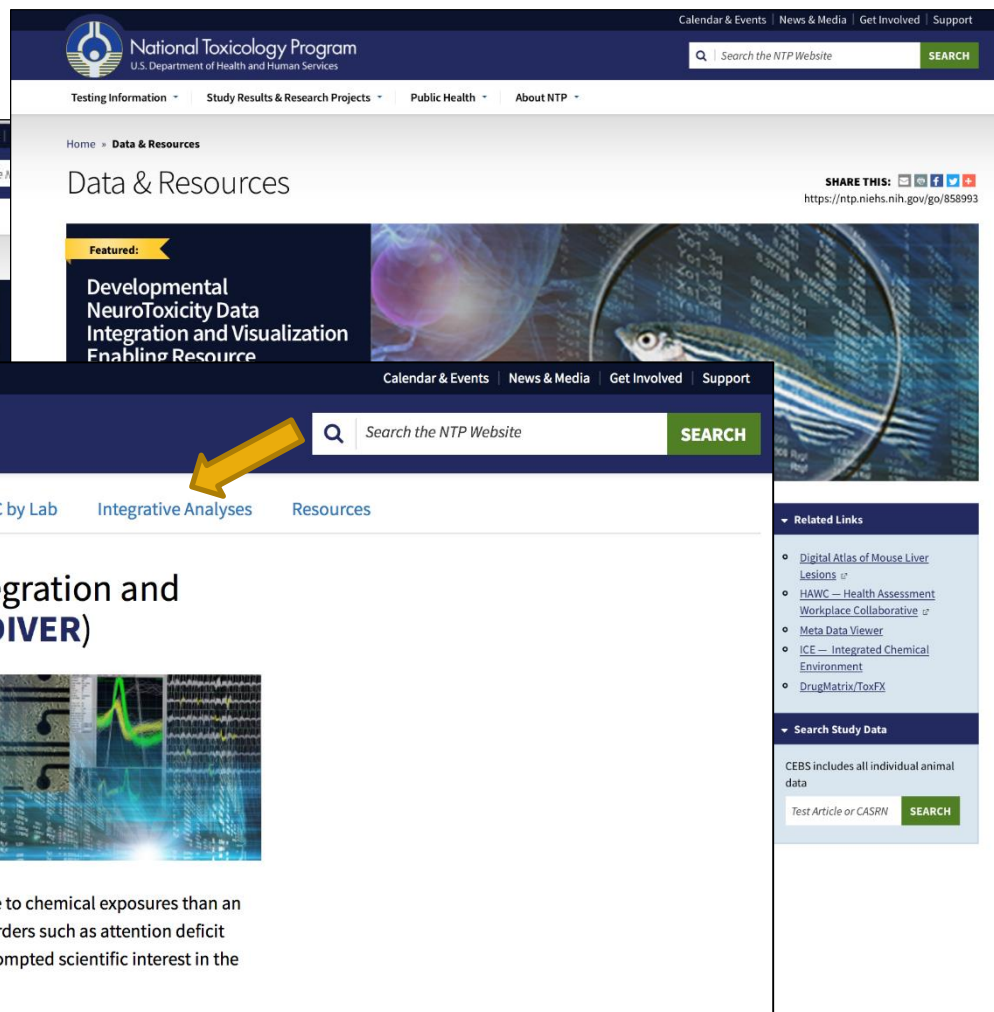
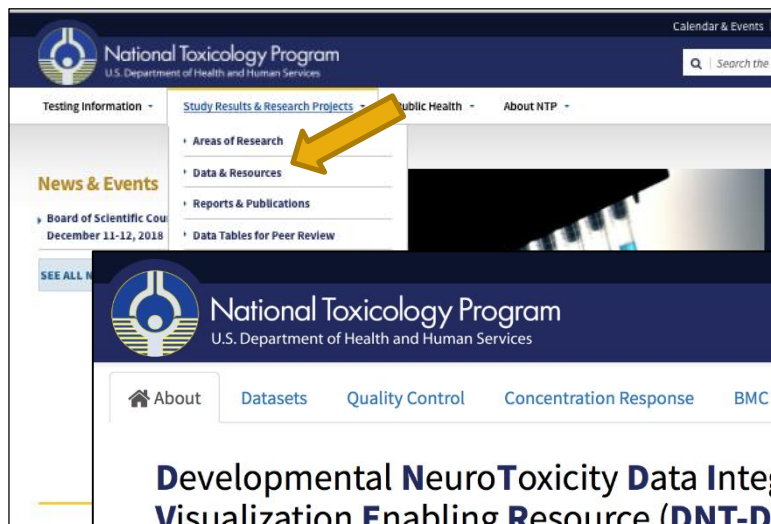


- Developmental neurotoxicity is an area of growing interest among our many stakeholders
- Gap = efficient and integrated strategy to identify compounds with DNT potential to inform further *in vivo* testing
- NTP hosted “Integrated Testing Strategies for DNTP” workshop (attendance by invitation) – Sept 2017
 - Crowd-sourced solutions (in vitro and alternative animal assays)
 - Common chemical library
 - Unified data-analysis pipeline for data comparison developed by NTP
 - *Toxicol Sci* (Nov 2018) <https://doi.org/10.1093/toxsci/kfy278>
- BSC presentation on integrated DNT strategies – Dec 2017
- DNT-DIVER – new, public, web-application tool that enables users to analyze, compare, and visualize data from divergent assays



NTP's DNT Resource

NTP Website



Developmental NeuroToxicity Data Integration and Visualization Enabling Resource (DNT-DIVER)



Research shows that a child's developing nervous system is far more vulnerable to chemical exposures than an adult nervous system. Recent increases in the rise of neurodevelopmental disorders such as attention deficit hyperactivity disorder (ADHD), dyslexia, and autism spectrum disorder have prompted scientific interest in the potential contribution of environment toxicants to these disorders.

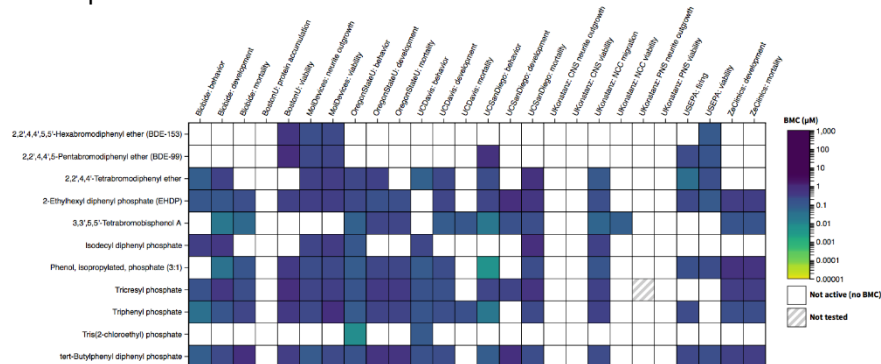
Traditional animal, or *in vivo*, studies provide important information about developmental neurotoxicity (DNT) but they are time and resource intensive. NTP has also developed more rapid [screening tools](#) that use human cell-based, or *in vitro*, assays, as well as alternate animal models such as zebrafish and planaria to identify toxicants with potential for DNT. Multiple tests, or assays, are often required to represent the complexity of the developing nervous system, but that can make it challenging to compare and summarize results.



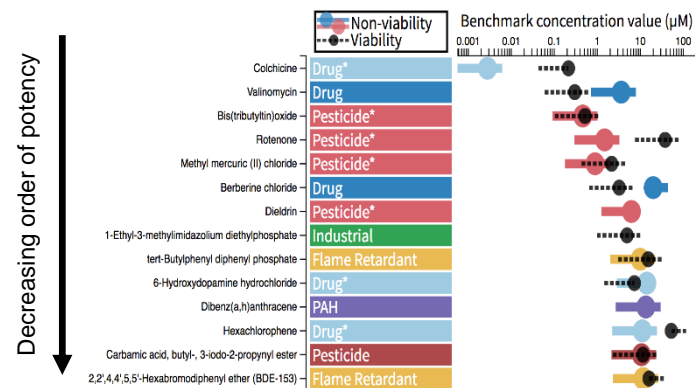
DNT-DIVER Integrative Analyses

<https://sandbox.ntp.niehs.nih.gov/neurotox/>

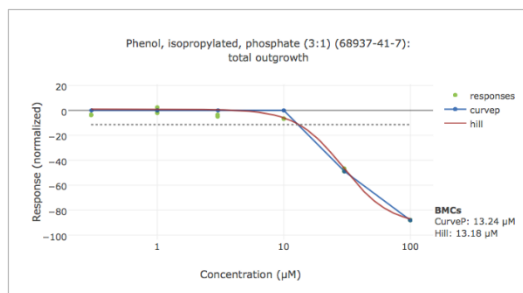
Example: Flame Retardants



Compare activity of compounds/ classes across multiple assays



Compare activity of compounds within an assay



Individual dose-response curves

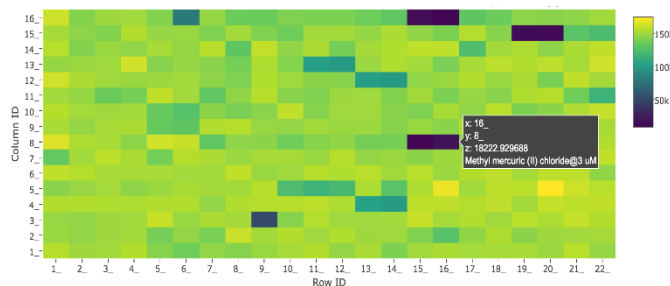
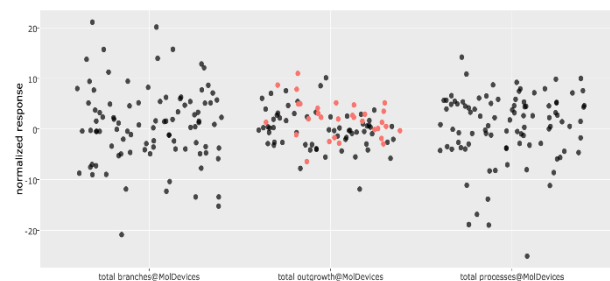


Plate and well level information



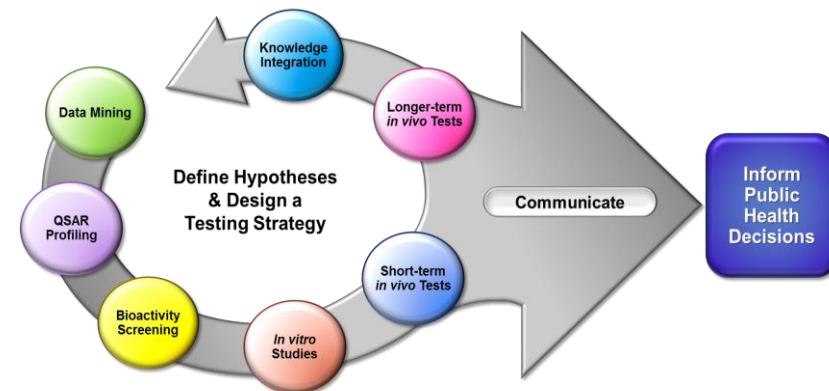
Control variability in assay

For further information contact Mamta Behl: mamta.behl@nih.gov



DNTP Strategic Realignment Presentations

- **EU Joint Research Commission, Ispra, Italy – July 18**
 - “Building on NTP Excellence to Re-invent Approaches to Toxicology.”
- **Board on Environmental Studies and Toxicology [BEST], National Academy of Sciences, Washington, DC – Dec 8:**
 - “Building on Excellence: Realigning the NTP Strategy for Future Impact.”



Thank You!

