



# An Update from the Department of Defense for the Interagency Coordinating Committee on the Validation of Alternative Methods

*March 12, 2019*

**Emily Reinke, Ph.D., D.A.B.T**

Biologist, Health Effects Division

Toxicology Directorate

U.S. Army Public Health Center



## *Objective*

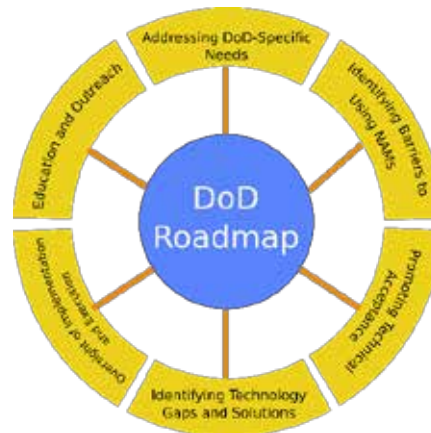
- Provide an annual update on the Department's activities related to alternative methods for toxicology testing for the Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM) Public Forum

# *DoD Activities that Support ICCVAM*

- Participating in ICCVAM Acute Toxicity Working Group; IVIVE Working Group; Ocular and Dermal Irritation Working Group; Read Across Working Group; Reproductive and Developmental Working Group; Skin Sensitization Working Group; EcoTox Working Group; Nanomaterials Working Group
- Validation assessments, proof-of-concept partnerships
  - Skin Sensitization
  - Acute Inhalation Toxicity
- Tri-Services Toxicology Consortium (TSTC)
  - Representatives from relevant DoD organizations
  - Share knowledge and ideas, collaborate on projects, and implement best practices
- One Health Initiative
  - Facilitates communication and collaboration across disciplines where the health of humans, animals, and the environment intersect

# Development of DoD Roadmap

- Development of a Joint DoD Roadmap to Promote the Use of New Approach Methodologies in Rapid Chemical Hazard Assessment
  - Emerging Toxicological Approaches in Rapid Chemical Hazard Assessment: Technical Interchange and Roadmap Development Workshop, Aug. 14-16, 2018, Aberdeen Proving Ground, MD
  - 1<sup>st</sup> draft in revision
  - Poster Wednesday March 13, 9:15-10:45 a.m. (Poster Number 2795, Board P299)



# *On-Going DoD Efforts Towards Alternative Approaches*

- Tissue-on-a-chip
- Computational Modeling Efforts
  - Digital Automated Molecular Screening Library (DAMSL)
    - Molecular docking for de novo prediction of molecular initiating events in adverse outcome pathway
  - In Vitro to In Vivo Extrapolation (IVIVE)
    - Development of a iPSC liver hepatocyte model to develop oral RfDs based on specific endpoints in liver cells (steatosis)
  - Rapid threat analysis for high toxicity compounds
    - Computational Rapid Identification & Scientific Threat AnaLysis (CRISTAL)
    - Agency specific efforts to develop predictive capabilities
- Agency specific tiering
  - Total Exposure Assessment Capabilities
  - Absorption, Distribution, Metabolism, Excretion, and Toxicity (ADMET) Center of Excellence
  - Research, Development, Testing and Evaluation (RDT&E) Tiered Approach

# Summary

- In partnership with other Federal agencies, academia, and industry, the Department of Defense remains committed to refine, replace, and reduce reliance on animal models when scientifically valid
- [Dtic.Belvoir.pm.list.animalreg@mail.mil](mailto:Dtic.Belvoir.pm.list.animalreg@mail.mil)

## Questions?

## *Upcoming ICCVAM Meetings*

- May 23, **ICCVAM Public Forum**, NIH, Bethesda
- Sep 19-20, **SACATM**, FDA CFSAN, College Park, MD