20 Years of Scientific Accomplishments

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Advancing Alternatives to Animal Testing

An ICCVAM Timeline

2013: Reinvention of ICCVAM; new focus on agency leadership, specific goals, and stakeholder engagement

1999-2012: ICCVAM recommendations on alternatives for eye/skin irritation, skin sensitization, acute toxicity, endocrine disruptors, pyrogen testing

2013-2020: Increased focus on computational toxicology, Tox21 support, and AOPs. ICCVAM-recommended alternatives implemented in regulatory policy for acute toxicity, endocrine disruption, and skin sensitization

1997: Ad hoc committee recommends establishment of permanent ICCVAM Committee

2000: ICCVAM Authorization Act passed establishing 15-agency committee

2009: International Cooperation on Alternative Test Methods (ICATM) established by ICCVAM and partners in the EU, Japan, and Canada

2011: ICATM expanded to include South Korea

2014: First ICCVAM Public Forum

2015: First ICCVAM ICCVAM Communities of Practice webinar

2017: NIST joins ICCVAM

2018: U.S. Strategic Roadmap published

2019: 2020
ICCVAM started as an ad hoc committee
"To establish, wherever feasible, guidelines, recommendations, and regulations that promote the regulatory acceptance of new or revised scientifically valid toxicological tests that protect human and animal health and the environment while reducing, refining, or replacing animal tests and ensuring human safety and product effectiveness."

- Consumer Product Safety Commission
- Department of Agriculture
- Department of the Interior
- Department of Transportation
- Environmental Protection Agency
- Food and Drug Administration
- Occupational Safety and Health Administration
- National Institute for Occupational Safety and Health
- Agency for Toxic Substances and Disease Registry
- National Cancer Institute
- National Inst of Env. Health Sciences
- National Library of Medicine
- National Institutes of Health
- Department of Defense
- Department of Energy
- National Institute of Science and Technology (since 2017)
ICCVAM Workgroups and Subcommittees

- Acute Toxicity
- Biologics
- Biomarkers
- Botulinum Toxin
- Dermal Irritation
- Ecotoxicology
- Endocrine Disruptors
- Genetic Toxicity
- Immunotoxicity

- In Vitro to In Vivo Extrapolation
- Metrics
- Nanomaterials
- Ocular Irritation
- Pyrogen
- Read Across
- Research and Development
- Skin Sensitization
- Strategic Roadmap
The first 10 years – Validation and Peer Review
The Local Lymph Node Assay: An ICCVAM First

- First method submitted to ICCVAM, 1997
- Sponsors:
  - Dr. F. Gerberick, P&G
  - Dr. D. Basketter, Unilever
  - Dr. I. Kimber, Zeneca
- ICCVAM International Peer Review Panel Meeting
  - September, 1998
  - Valid substitute for guinea pig tests
- Regulatory Acceptance
  - U.S. EPA, FDA, CPSC
  - October, 1999
  - OECD TG 429: 2002

https://ntp.niehs.nih.gov/go/40482
• **2007 NRC Report:**

  Calls for transforming toxicology: “from a system based on whole-animal testing to one founded primarily on in vitro methods that evaluate changes in biologic processes using cells, cell lines, or cellular components, preferably of human origin.”

  Envisions pathway-based toxicology, where pathway perturbations are used to predict adverse effects

• **2009 NRC report:** “the realization of the promise [of the 2007 report] is at least a decade away”
New Vision and Direction for ICCVAM

- The ICCVAM document: “A New Vision and Direction for ICCVAM” describes the initial steps towards a new strategic direction for ICCVAM and NICEATM

- Covers three areas:
  - ICCVAM priority setting and science focus areas for immediate ICCVAM resource investment
  - Plans to improve communications with stakeholders and the public
  - Exploring new paradigms for the validation and utilization of alternative toxicological methods
ICCVAM and NICEATM Recognition: SOT Enhancement of Animal Welfare Award

- 2006: William Stokes (NICEATM Director)
- 2010: Leonard Schechtman (former ICCVAM Chair)
- 2016: Warren Casey (NICEATM Director)
- 2017: David Allen (Principal Investigator, ILS NICEATM support contract)
- 2018: Anna Lowit (ICCVAM Co-chair)
- 2019: Suzy Fitzpatrick (ICCVAM member)

SOT Achievement Award

- 2019: Nicole Kleinstreuer (former NICEATM Deputy, current Acting Director)
20 Years of Contributions: Publications and Presentations

- ICCVAM Reports
- Peer reviewed papers
- Abstracts presented
ICCVAM Biennial Progress Report

- Required by the ICCVAM Authorization Act
- Summarizes agency activities to promote alternatives or reduce animal use
  - Contributions from every ICCVAM member agency
Biennial Report: Find Content by Agency

- Hover over “Search Agencies” to show a list of agencies
- Click on agency of interest
- List of articles tagged with that agency will come up
- Click on item to read article
Biennial Report: Find Content by Topic

- Hover over “Search Topics” to show a list of topics
- Click on topic of interest
- List of articles tagged with that topic will come up
- Click on item to read article
U.S. Strategy and Roadmap: January 2018

Connect end users with the developers of alternative methods

Establish new validation approaches that are more flexible and efficient

Ensure adoption and use of new methods by both regulators and industry

More information: https://ntp.niehs.nih.gov/go/natl-strategy
Implementation of the Roadmap

Where we are today...

- CATMoS
- OPEn (q)saR App
- Integrated Chemical Environment
- Application of Modern Toxicology Approaches for Predicting Acute Toxicity for Chemical Defense
- Integrated Science Policy: Use of Alternative Approaches for Skin Sensitization as an Impediment for Laboratory Animal Testing
- EPA's Office of Research and Development

DRAFT FOR PUBLIC COMMENT
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