



**NTP**  
National Toxicology Program

# Comments on the Computational Toxicology Research Program

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## Outline

- Disclaimer
- History
- Methods
- Expectations
- Questions
- Suggestions



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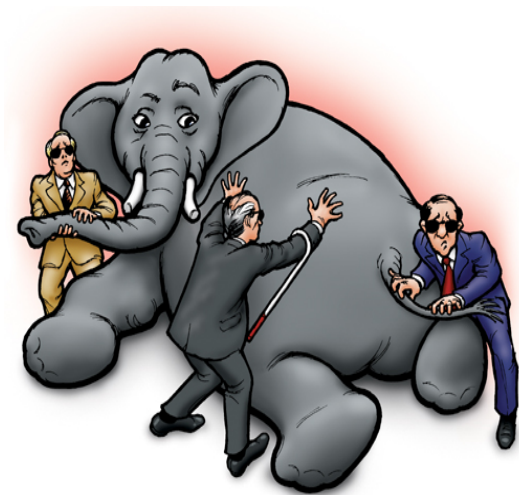
# The Tox21 Community





## History

- First and foremost- an experiment
  - Technical feasibility
  - Sense or nonsense
  - Biological sniff test
  - Hit rate
  - Sensitivity and specificity
- Are the findings useful?
- If so, for what purpose?





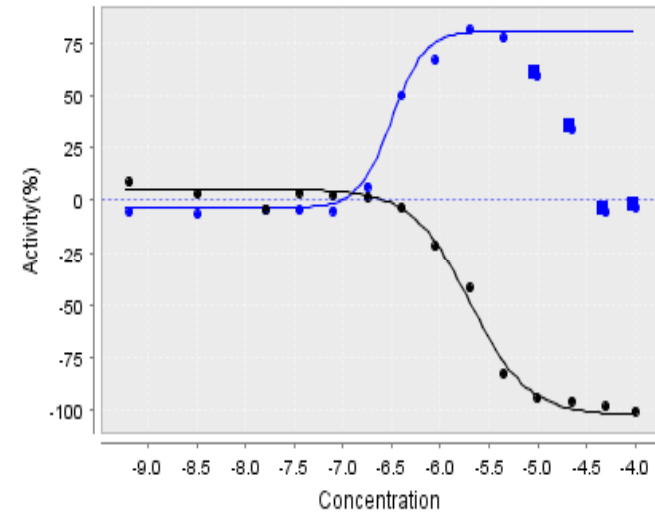
## Methods

- Contracted commercial HTS assays
  - Expertise
  - Availability
  - Variety of technologies
- Registered pesticide actives
- Collaborations with NTP, NCGC
- Communication with stakeholders
  - Scientific meetings
  - Community of practice
  - Fried chicken circuit- and NRC Tox in the 21<sup>st</sup> Century
- Database development and informatics expertise
  - ACToR
  - ToxRefDB



## Expectations?

- Technically feasible- yes
- Sense or nonsense- sense
- Biological sniff test- pass
- Hit rate- interestingly low
- Sensitivity, specificity- too early to tell
- Are the findings useful?- yes, but maybe not as anticipated
- If so, for what purpose?-
  - Comparisons with reference experimental animal databases?
  - Priority setting and design aids for experimental animal studies?
  - Identifying human hazards?







## Questions

- Toxicity Pathways
  - Do they provide “key events” in MOA ?
  - Do they underlie the various pathologies, altered physiology, etc that reflect modes of action?
  - Do they allow, enhance or supersede cross-species extrapolation?

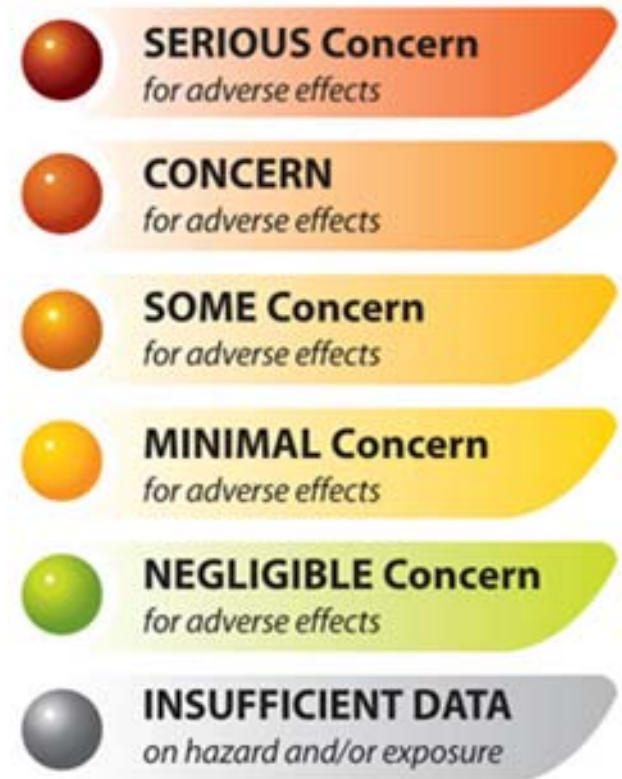




## What will be required for acceptance of Toxicology in the 21st Century?

### Conceptual validation

- Human risk assessment
- Human hazard identification
- Priority setting for further evaluation
- Generally recognized as safe





## My perspective

- CTRP is successful
  - Productive
  - Innovative
  - Cooperative
  - Publicly accessible
  - Well managed
  - Timely
  - Addressing right questions
  
- Congratulations to all

