

March 4, 2025

**RE: Support for H.B. 1448 – Mandating the Use of Non-Animal Testing Methods**

Dear Chair Pena-Melnyk, Vice Chair Cullison, and esteemed members of the Health and Government Operations Committee,

On behalf of the National Anti-Vivisection Society (NAVS) and our supporters in Maryland, we urge you to support H.B. 1448, critical legislation to modernize safety testing requirements in Maryland by ensuring that when scientifically validated, non-animal test methods exist, they are utilized in place of outdated animal models.

Maryland has already taken significant steps toward advancing humane and human-relevant science through the establishment of the Human-Relevant Research Fund, the first state grant program dedicated to non-animal research. H.B. 1448 builds upon this progress by mandating that companies and research facilities use non-animal methods when they have been accepted by regulatory agencies as equivalent or superior to traditional animal tests.

**Scientific and Ethical Rationale for H.B. 1448**

Decades of research have shown that animal testing is an unreliable predictor of human outcomes, and that superior, non-animal methods are available. Consider the following:

- **Toxicity Testing:** In vitro cell-based models, such as human organ-on-a-chip technology, replicate human physiological responses with greater accuracy than traditional animal testing. Research published in *Nature Reviews Drug Discovery* found that organ-on-a-chip models can predict drug toxicity in humans with up to 87% accuracy<sup>1</sup>, compared to much lower reliability in animal models.
- **Chemical and Product Safety Testing:** Advanced computational methods, including artificial intelligence (AI) and machine learning, have revolutionized chemical toxicity prediction. A 2018 study in *Toxicological Sciences* found that computational toxicology models often outperform animal tests in identifying potential carcinogens and toxic substances.<sup>2</sup>

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<sup>1</sup> Ewart, L., Apostolou, A., Briggs, S.A. *et al.* Performance assessment and economic analysis of a human Liver-Chip for predictive toxicology. *Commun Med* **2**, 154 (2022). <https://doi.org/10.1038/s43856-022-00209-1>

<sup>2</sup> Thomas Luechtefeld, Dan Marsh, Craig Rowlands, Thomas Hartung, Machine Learning of Toxicological Big Data Enables Read-Across Structure Activity Relationships (RASAR) Outperforming Animal Test Reproducibility, *Toxicological Sciences*, Volume 165, Issue 1, September 2018, Pages 198–212, <https://doi.org/10.1093/toxsci/kfy152>

- **Pharmaceutical Development:** The failure rate of drugs transitioning from animal studies to human clinical trials exceeds 90%, as documented in numerous studies spanning many years. Many of these failures are due to species differences that render animal models ineffective for human medicine.

Human-based models are not just more ethical compared to animal models—they are scientifically superior, cost-effective, and faster.

### **H.B. 1448: A Logical and Necessary Step Forward**

Several states, including California, New York, Virginia, and New Jersey, have already passed laws requiring the use of non-animal test methods when available. Maryland should continue its leadership in biomedical innovation and ethics by passing H.B. 1448.

This legislation is not a ban on all animal research, but rather a commonsense measure that ensures science is guided by the best available technology while reducing unnecessary animal suffering. Furthermore, requiring transparency in testing methods through annual reporting to the Attorney General's office will provide accountability and encourage continued innovation in the research and testing sector.

NAVS strongly urges the committee to pass H.B. 1448. This bill reflects the best scientific evidence, aligns with national and international regulatory trends, and advances both ethical and economic interests.

Thank you for your time and consideration. We welcome the opportunity to discuss this issue further and provide additional scientific evidence in support of H.B. 1448.

Sincerely,



Meredith Blanchard  
Senior Manager, Advocacy and Policy  
National Anti-Vivisection Society  
[MBlanchard@NAVS.org](mailto:MBlanchard@NAVS.org)