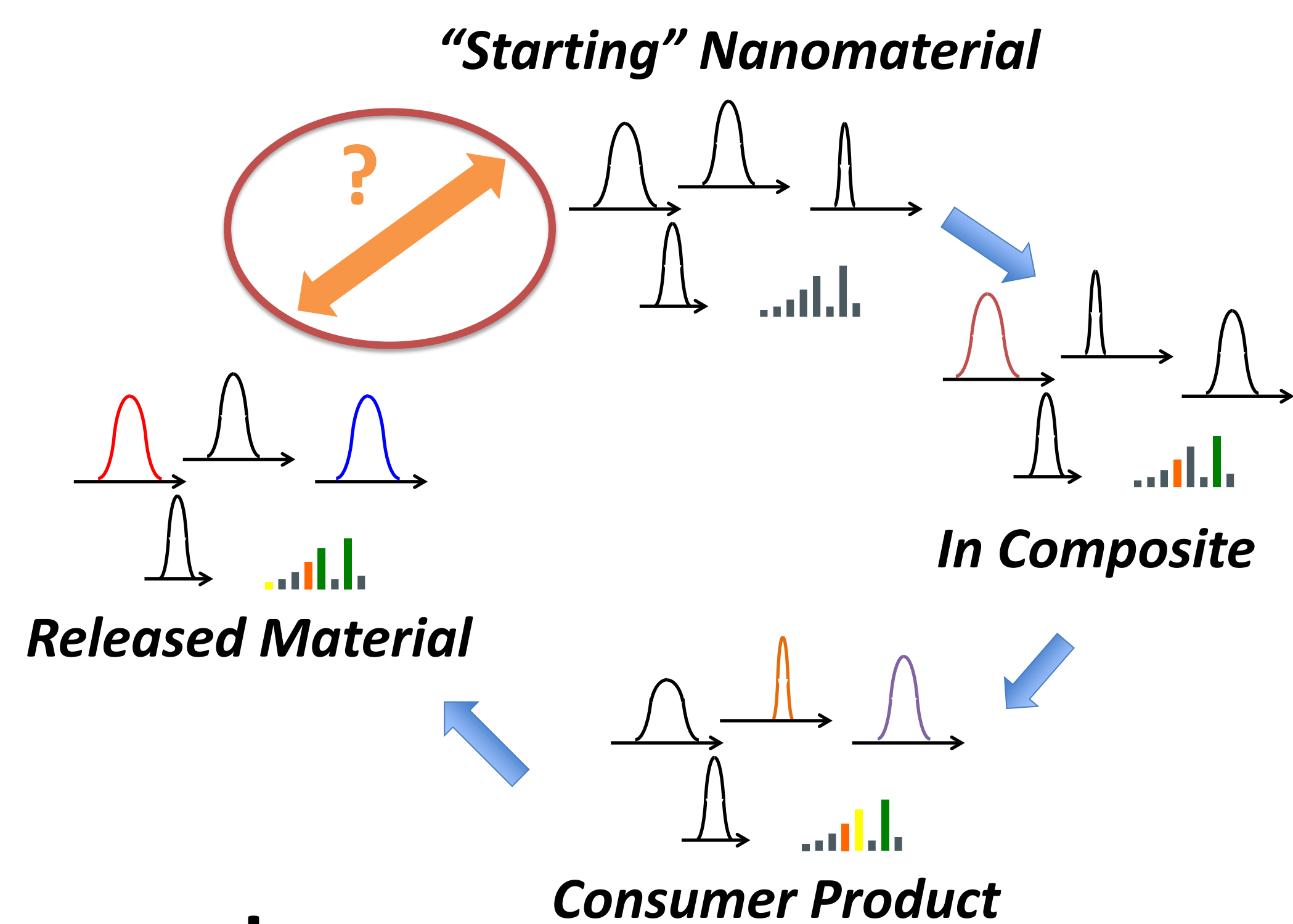


Richard A. Canady, Steve Froggett¹, Beth Julien², Joseph Cotruvo³
Lyubov Tsytsikova, Christina West, Stephanie Carter and Anglatette Dyson

International Life Sciences Institute – Research Foundation | Washington, DC

¹Froggett & Associates, LLC | ²LifeSci Research Service | ³Joseph Cotruvo & Associates, LLC

NanoRelease: Consumer Products



Problem:

Methods to reliably measure & characterize release from commercial applications of engineered nanomaterials lacking.

Approach:

RSIA convenes a multi-stakeholder steering committee overseeing the efforts of over 50 leading experts.

- Products made from polymers with multi-walled carbon nanotubes were selected for the first round of methods development.

- Identify polymers, exposure scenarios & best release measurement methods.

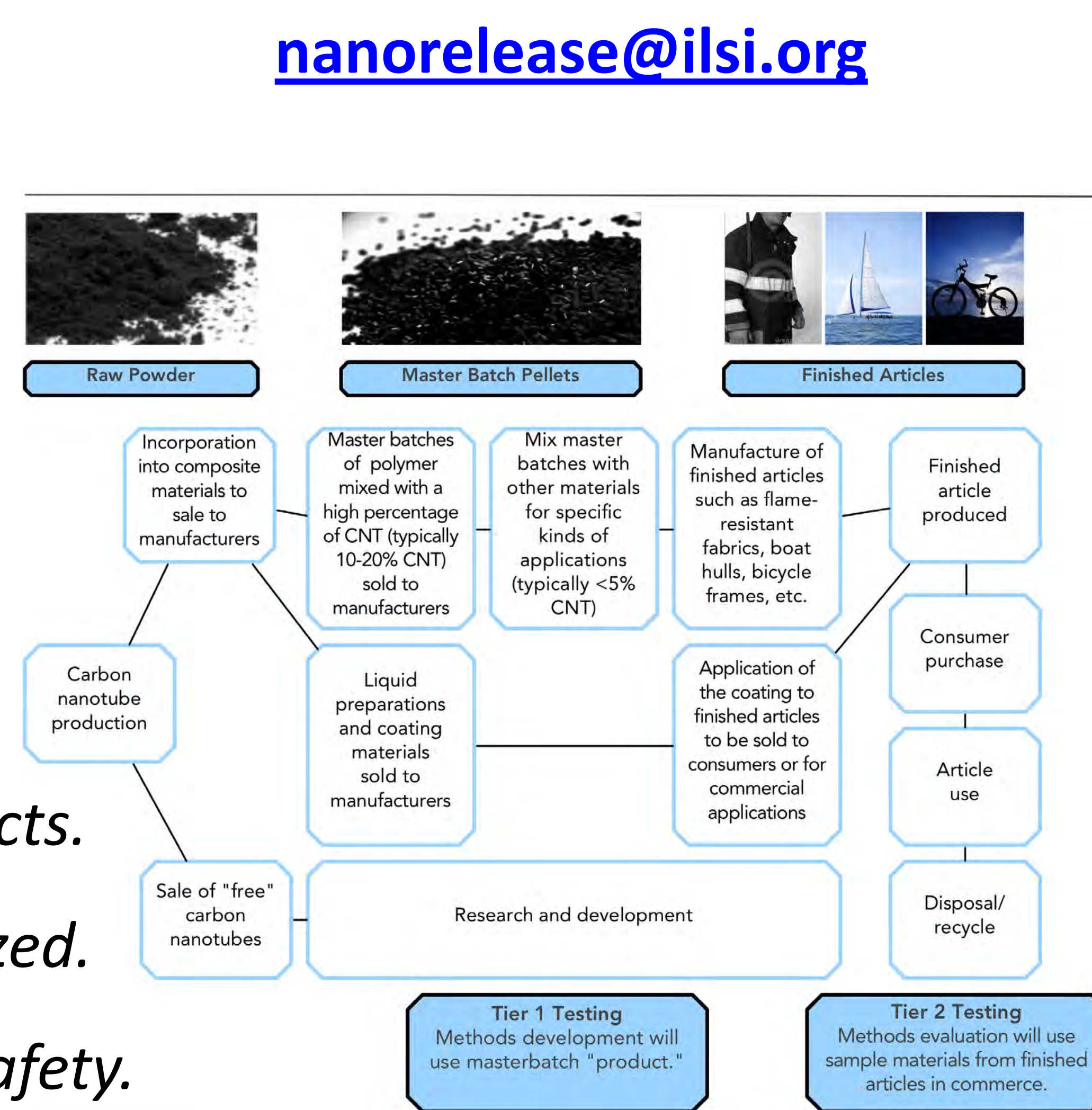
- Coordinate industry sample preparation for testing.

- Round-Robin testing of methods.

- Best methods used to investigate consumer products.

- Methods become standardized.

- Data available to improve safety.



Steering Committee: A. Atkinson, A. Stefaniak, B. Nowack, B. Kojola, C. Fehrenbacher, C. Geraci, D. Boverhof, D. Kaiser, L. Chen, M. Hansen, M. Hill, P. Sayre, T. Thomas, V. Mursahov, Y. Sultan, C. Kingston, S. Clancy, J. Carter, C. Cairns, J. Monica, B. Karn & R. Canady

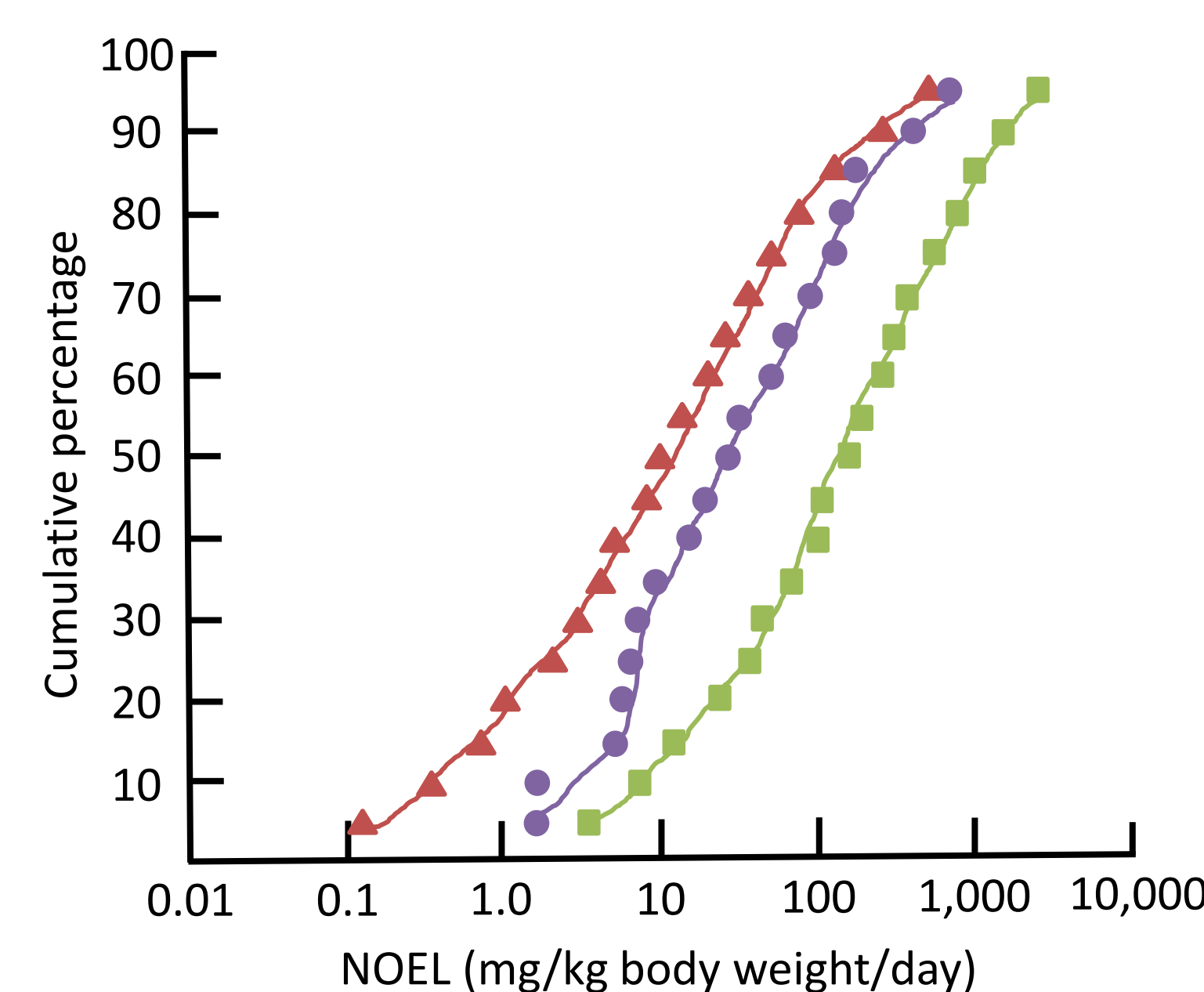
Supporting Organizations: U.S. EPA, Environment Canada, Health Canada, American Chemistry Council, Society of Chemical Manufactures & Affiliates, National Institute of Standards & Technology, The Adhesive & Sealant Council, and American Cleaning Institute

Antimicrobial Threshold of Toxicological Concern

Problem:

Lacking chemical-specific toxicity data, how can the Threshold of Toxicological Concern (TTC) approach be used to identify “safe” levels of exposure to antimicrobial chemicals (AMs) of known chemical structure?

- Munro et al (1996) Food & Chem. Tox (34) 829; Based on Cramer et al (1978)
- structural classes I, II & III (■ class I percentiles; ● class II percentiles; ▲ class III percentiles)



Approach:

Develop a TTC-based decision framework to facilitate risk assessment & prioritize toxicity testing for AMs.

- Assess whether TTC values from the Munro reference dataset are protective of organic AMs, based on available AM toxicity data.

- Determine which AM structural classes are “covered” by Munro reference chemicals, & which are not.

- Explore how the TTC approach might be adapted to address non-organic AMs.

- Incorporate dermal exposure scenarios into the AM decision framework.

Work of: A. G. Renwick, K. Arvidson, T. Leighton, T. Seidle, S. Felter, C. Yang, M. Martin, A. Boobis, A. Worth, M. Laufersweller, M. Cheesemen, P. Price, S. Olin, T. McMahon, V. Dellarco, B. Julien & R. Canady

Collaborating Organizations: American Chemistry Council, U.S. Environmental Protection Agency & U.S. Food and Drug Administration

Efficient Water Use at Bottling Facilities

Problem:

Bottling & food production facilities lack guidelines on how to efficiently and safely reuse water.

Experts from the drafting group will be addressing issues of clean, safe water reuse during Tuesday’s panel discussion

Approach:

RSIA has convened an expert panel to draft guidelines that follow conservation principles, while incorporating available, proven safe technologies used in water recycling to minimize a facility’s water footprint.

Case Study:

Yatala Brewery, Queensland Australia



- 2002 plant operations; water to product ratio was - - 5.5 - 6.5 : 1
- 2003 renovations to implement reuse resulted in -- 2.16 : 1

Safe reuse of water at Yatala Brewing resulted in a 33 – 40% reduction of water use.

- Guideline drafting by a panel of experts in water reuse safety, toxicology & microbiology.
- Critical reviews of the guidelines by independent expert panels & a broad spectrum of stakeholders during drafting process ensures added value and acceptability.
- Public comment during a workshop finalizes review.
- Final guidelines will be made freely available in late 2012.

cleanwaterreuse@ilsii.org

Guideline Drafting Group: A. Eaton, B. Jimenez, D. Cunliffe, D. Davidson, J. Fawell, D. Bridgers, A. de Roda Husman, S. Carter, J. Cotruvo, S. Froggett & R. Canady