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# Practical Decision-Making Tools for Identifying Safer Alternatives

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## Overview of Meeting Objectives

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# Focus Areas

- Framework for identifying problem chemicals and safer alternatives
  - Existing and emerging tools used to prioritize chemical hazards and predict toxicity and environmental fate/exposure
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# Identifying Problem Chemicals: Carcinogen Example

## ■ Chemical A

- Positive cancer bioassays in male and female mice, with increases in two tumor types; bioassays used pooled controls
- Structure-activity relationship to multiple known carcinogens with same pattern of tumors
- Genotoxic

## ■ Chemical B

- Single standard bioassay in female rats with unusually high incidence of a rare tumor

➤ Chemical B is formally identified as a carcinogen while Chemical A is not because of reliance on bioassay data only

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# Comparison of Chemical Alternatives

- Chemical A
    - Toxic air contaminant
    - Listed as known to the state to cause cancer
  - Chemical B
    - Not tested for carcinogenicity, reproductive/developmental toxicity or other chronic health endpoints
    - Only short-term tests available
    - Structural alerts
  - No clear basis to judge safety of Chemical B as replacement for Chemical A
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# Themes

- Lack of framework to address data gaps
    - Approaches for action/assessment in the absence of complete toxicological data
  - Lack of framework to use new methods
    - Approaches for application of new types of data/methods in place of complete reliance on standard toxicological tests
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# Objectives

- Discuss and describe the kinds of data that are needed to implement a robust framework for identifying problem chemicals and safer alternatives
  - Identify models and approaches that could be incorporated into existing Cal/EPA programs to better identify and prioritize chemicals of concern for assessment or action
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# Objectives (cont.)

- Identify models and approaches that could be used to better respond to questions about the relative hazards of chemicals in use or proposed for use
  - Review and evaluate existing methods and possible approaches for distinguishing lower and higher hazard chemicals to help inform efforts toward stewardship and sustainability
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# Objectives (cont.)

- Consider how, when and whether to use new methods and new ways of thinking about the actions of chemicals in characterizing the toxicity and exposure potential of chemicals
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# Session One

- Existing chemical prioritization approaches to identify problem chemicals and safer alternatives
    - Common threads
    - Types of data used
    - Hazard traits addressed
    - Strengths and weaknesses
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