



Interdisciplinary Workshop
on the
**Applicability of Invertebrates as Animal
Models for Human Cancers Particularly
when Studying Environmental Causes**

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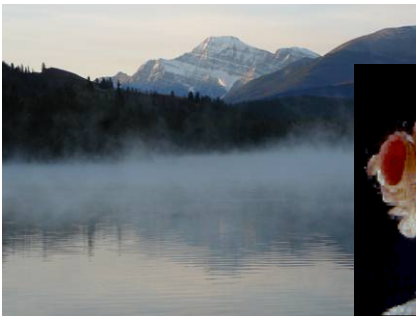
British Columbia
Environmental & Occupational
Health Research Network

The logo for the British Columbia Environmental & Occupational Health Research Network, featuring a stylized green mountain range within a circular outline.



Rational for the Workshop

1. Environmental health affects human and animal health alike, but research is often separate and understanding may be restricted by areas of research
2. 'Epidemiologic triangle' describes the intersection of *Host*, *Agent*, and *Environment* and can be applied both to wild animal and human disease outbreaks
3. Invertebrate populations may be useful models for environmental health effects because.....



Why Invertebrates?

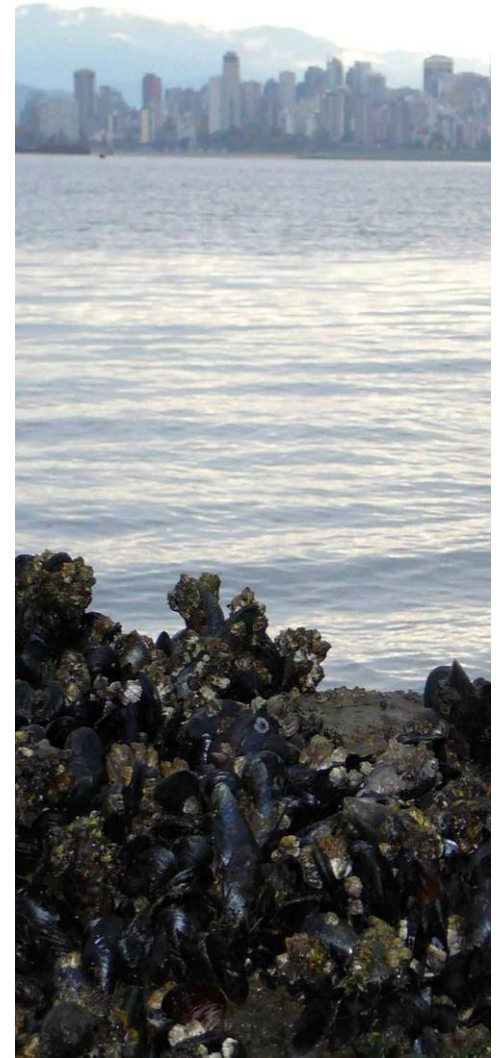
1. Invertebrates have been used widely in bio-medicine and environmental monitoring
2. Invertebrates serve as sentinels for environmental carcinogens and provide cost-effective bioassays for testing carcinogens.
3. Invertebrates and vertebrates have many genes and pathways in common
4. Invertebrates can be kept in laboratories, and can also be assessed as populations in the environment
5. Invertebrates are cheap, abundant, “ethical” and often sessile





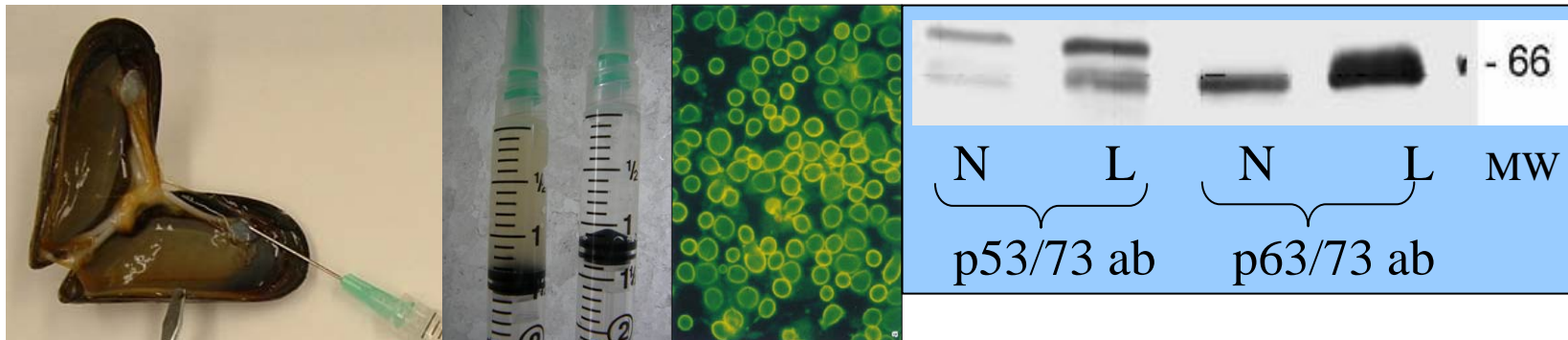
Possible Challenges

- Physiological differences between vertebrates and invertebrates
- Genetics only well known for lab models *C. elegans* and *D. melanogaster*
- Invertebrates in their environments are not well understood beyond their taxonomy, especially diseases
- Technological Challenges



Where we come from:

- Bivalves are affected by disease: Haemic Neoplasia
- Likened to Burkitt's Lymphoma in humans
- Causes likely environmental and/or viral
- Tumor suppressor protein p53 is involved (protein and mRNA expression, mutation – see our poster)
- Mussel and clam p53 and its isoforms p63/73 and Δ Np63/73 are highly similar to human homologues





Objectives of Workshop

- Learn from each other (other invertebrate models, human cancer genetics and epidemiology, technologies)
- What are the commonalities and differences in our approaches?
- Evaluate the applicability of sessile “wild” invertebrate populations and their physiology and genetics to human cancer epidemiology and comparative genetics
- Identify critical challenges that need to be addressed to further our understanding of diseases in invertebrates
- Find interdisciplinary research approach



Workshop Details



- When: December 1 – 2, 2006, start 8:30 am
- Where: Peter Wall Center, UBC,
- Info and RSVP:
amuttray@chml.ubc.ca, sbaldwin@interchange.ubc.ca
<http://faculty.chml.ubc.ca/amuttray/workshop.html>