THE NERAM COLLOQUIA

INTERPRETING SCIENCE FOR DECISION MAKERS
Overview

- What is NERAM?
- Why we are here?
- Science, interpretation of science, and policy
- The NERAM Colloquia:
  - How they will work
  - What they will do for you
- What we need from you
WHAT IS NERAM? (1)

Network for Environmental Risk Assessment & Management

- A Canada-wide resource for independent, credible and multi-disciplinary scientific advice on environmental risk assessment and management.
WHAT IS NERAM? (2)

Network for Environmental Risk Assessment & Management

NERAM is a NETWORK of:

- University partners/members
- Industry partners
- Government partners

History of NERAM
NERAM: NETWORK STRUCTURE

NERAM Secretariat
Institute for Risk Research
University of Waterloo

University of Alberta

Government Partners

University of Ottawa
Centre for Population Health Risk Analysis

Laval University

Industry Partners

Consultants

NGOs

International nodes
WHY ARE WE HERE?

- Both industry and government face a multitude of challenges related to environmental regulation
- NERAM can help
- NERAM needs your support
HOW THE NERAM COLLOQUIA CAN HELP

- Forge a stronger link between science and decision making
- Promote use of NERAM as a credible source of scientific research and interpretation
- Provide policy makers with better scientific advice by:
  - Improving degree of certainty in scientific data
  - Improving consensus in science interpretation
ROLE OF SCIENCE IN POLICY MAKING

Scientific Data

Political Issues

Economic Issues

Social Issues

Interpretation

Interpretation

Interpretation

Interpretation

Environmental Policy Decisions
INTERPRETATION OF SCIENCE (1)

Scientific Data

Interpretation for policy

Uncertainty
The Problem: Example of Ozone (1)

- Proposed Canada Wide Standards (CWS) for ground-level ozone based on studies of people with:
  - Asthma
  - Chronic Obstructive Pulmonary Disease (COPD)

- Health outcomes considered are:
  - Premature mortality
  - Increased hospital admissions

- Uncertainties in the interpretation of these scientific data significantly affect the CWS
The Problem: Example of Ozone (2)

Gong, H.G et al, 1997: “Responses of Older Men with and without Chronic Obstructive Pulmonary Disease to Prolonged Ozone Exposure“; Arch of Env Health, vol 52 (no. 1)
The Problem: Example of Ozone (3)

Gong, H.G et al, 1997: “Responses of Older Men with and without Chronic Obstructive Pulmonary Disease to Prolonged Ozone Exposure“; Arch of Env Health, vol 52 (no. 1)

Fig. 2. Mean total symptom scores derived from questionnaires administered before, during, and after O₃ and clean-air exposures for COPD subjects and healthy subjects.
INTERPRETATION OF SCIENCE (2)

Scientific Data

Interpretation for policy

Greater Certainty
NERAM COLLOQUIA: THE PROCESS

NERAM Colloquia

Action Items

Project Champions

Research Initiatives

Research Updates

COLLOQUIA SECRETARIAT

PROPOSALS

STEERING COMMITTEE
NOT JUST ANOTHER SCIENCE CONFERENCE!

- Not only a forum for presentation of new research
- Emphasis on problem solving & prioritization
- Scientists from different disciplines together
- Scientists, decision makers & stakeholders together
- Consensus-seeking debate format
- Concrete, clear deliverables ♦
NERAM COLLOQUIA DELIVERABLES

- Identification/prioritization of research
- Multi-stakeholder consensus/recommendations
- Peer reviewed publication
- Facilitation of research funding
- Networking between all stakeholders
NERAM COLLOQUIA: WHY AIR QUALITY?

- High level of concern for potential health effects
- Test case for regulatory paradigm (epidemiology)
- Difficult, interdisciplinary, & complex issues
- Much uncertainty in the interpretation of science
- Reducing uncertainty would have large benefits
- High cost of regulation
NERAM COLLOQUIA: SCHEDULE

1999  Ottawa
2000  Baltimore
2001  Milan
2002  Japan
2003  Ottawa ◊
NERAM COLLOQUIA: FUNDING

- $250K - $300K per Colloquia
- All funds to go directly to NERAM
- $100K from private sector (matched 1:1 or 2:1)
- $150K from public sector (mostly matched funds)
- Need $10K/yr commitment over five years from ten Canadian industry associations or companies
- Funds also from U.S. and Europe
NERAM: NEXT STEPS FOR ORGANIZERS

- Solicit funding from private and public sector

- Proceed with initial organizational details

- Continue to promote internationally
WHAT WE NEED FROM YOU

- $10K commitment per year for five years
- Identify key contacts within your organization
- Build awareness of the NERAM Colloquia within and outside your organization
CURRENT SUPPORT: FINANCIAL

<table>
<thead>
<tr>
<th>Industry</th>
<th>Amount</th>
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<tr>
<td>Petroleum (CPPI)</td>
<td>$50 000</td>
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<tr>
<td>Steel (CSPA)</td>
<td>?</td>
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<tr>
<td>Cement (Portland)</td>
<td>?</td>
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<tr>
<td>Electrical (CEA, CRTA)</td>
<td>?</td>
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<tr>
<td>Transportation (CVMA)</td>
<td>?</td>
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<tr>
<td>Chemical (CCPA)</td>
<td>?</td>
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<td>Mining (MAC)</td>
<td>?</td>
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<tr>
<td>Forest Products (CPPA)</td>
<td>?</td>
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<tr>
<td>Business Community (CCC, BCNI)</td>
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<tr>
<td>Manufacturing Sector (AMEC)</td>
<td>?◊</td>
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## CURRENT SUPPORT: ORGANIZATIONAL

<table>
<thead>
<tr>
<th>Organization</th>
<th>Contact Person</th>
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<tbody>
<tr>
<td>Health Canada</td>
<td>Dr. S. MacDonald</td>
</tr>
<tr>
<td>Environment Canada</td>
<td>Mr. R. Kent</td>
</tr>
<tr>
<td>Ministry of Environment, Ontario</td>
<td>Mr. J. Smith</td>
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<tr>
<td>Ottawa University</td>
<td>Dr. D. Krewski</td>
</tr>
<tr>
<td>John Hopkins University</td>
<td>Dr. J. Samet</td>
</tr>
<tr>
<td>George Washington University</td>
<td>Dr. G. Carlo</td>
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<tr>
<td>European Commission</td>
<td>Dr. A. Samogyi</td>
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<tr>
<td>European Institute for Oncology</td>
<td>Dr. P. Boyle</td>
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<td>Japan</td>
<td>Dr. D. Preston ♦</td>
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THE NERAM COLLOQUIA

INTERPRETING SCIENCE
FOR
DECISION MAKERS
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**NERAM**

*The Problem 1*

*The Problem 2*

*The Problem 3*

*History of NERAM*

*Planning Com*
HISTORY OF NERAM

- Founded in 1996
- Part of Institute for Risk Research (U. of Waterloo 1982)
- Expansion of role from knowledge-based centres to an integrated network for risk management
- Joint projects between public, private, & academic sectors
NERAM UNIVERSITY PARTNERS

University of Waterloo: Institute for Risk Research
University of Ottawa: Centre for Population Health Risk Analysis
University of Alberta: Laval University

Member universities: McMaster, Alberta, UBC, Montreal, Guelph, Alabama, Simon Fraser, Ryerson Polytechnic University
NERAM PRIVATE SECTOR PARTNERS

Beak Consultants
Bovar
Cantox Environmental
CSA
Dofasco
GlobalTox Inc
Imperial Oil

INCO
Jacques Witford Env
O’Connor Associates
SENES Consultants
Shell
Syncrude
Thorne Butte
NERAM GOVERNMENT PARTNERS

Alberta Health
Environment Canada
Health Canada
Indian Affairs & Northern Development
Industry Canada
Ontario Ministry of Environment
INDUSTRY CHALLENGES

- Environmental regulations carry very high costs
- Unsatisfied with small bang for big bucks
- Regulatory paradigm shifting
- Policy does not reflect science
- Regulators default to precautionary principle
- Lack of meaningful access to regulatory process
- Usually in reactive mode -- too late!
GOVERNMENT CHALLENGES

- Under pressure to act (public, NGOs)
- Politics can override science
- Need for consensus building
- Conflicting interpretations of science causes problems
- Fiscal restraint and staff shortages
- Accountable for cost effectiveness
- Need for international harmonization ♦
COST OF REGULATION

• U.S. industry costs of complying with air quality regulations will be 5-10% of operating costs

<table>
<thead>
<tr>
<th>OZONE</th>
<th>Attainment costs</th>
<th>$1.1 - 9.6 billion/year</th>
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<tr>
<td>PM</td>
<td>Attainment costs</td>
<td>$ 8.6 - 37 billion/year</td>
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INITIATING COMMITTEE

- Temporary organization
- Initiate funding and organizational processes
- Suggest Planning Committee membership
  (to be approved by NERAM Steering Committee)
ADVISORY COMMITTEE

- Provide general advice to Planning Committee
- Assist in identifying and engaging speakers
- Build awareness of Colloquia within international scientific community
PLANNING COMMITTEE

- Spearhead the Colloquia
- Decide on logistics/organisation of Colloquia
- Identify moderators and speakers
- Publish proceedings
- Direct Colloquia follow-up activities ♦
COLLOQUIA SECRETARIAT

- Assistance with logistics/operations of Colloquia
- Provide support for Planning Committee
- Assist Colloquia speakers with preparation of presentations
- Assistance with publication of proceedings
- Communicate with NERAM Steering Committee 🌟
COLLOQUIA FORMAT

Day 1  Presentations on theme topics
Day 2  Theme debates by scientific experts
Day 3  Identification of priority action items

◊◊◊◊
NERAM COLLOQUIA: DAY 1

- Communication of colloquium themes and objectives
- Presentation of scientific papers on theme topics related to the degree of certainty in public health risk assessment
- Review of progress on action items/initiatives from previous Colloquia
NERAM COLLOQUIA: DAY 2

- Presentation by recognized scientific experts of alternate viewpoints on selected topics central to the theme
- An independent scientific expert will serve as moderator to identify areas of agreement and disagreement in the alternate viewpoints
- A secretariat from NERAM will assist in the preparation and distribution of the experts’ presentations in advance of the Colloquium
NEARAM COLLOQUIA: DAY 3

- Moderators will present conclusions of each theme topic, including prioritisation of various initiatives across themes
- Participant input to conclusions, with the goal of obtaining consensus
- The Moderator’s conclusions, and comments from the participants, will be peer reviewed and will form basis of published recommendations of initiatives
Funds to be solicited from the following sectors:

- Petroleum
- Cement
- Automobile
- Chemical
- Waste Management
- Steel
- Utilities
- Mining
- Plastics
- Transportation
**NERAM STEERING COMMITTEE (1)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms. Katrina Altoft</td>
<td>CSA</td>
</tr>
<tr>
<td>Mr. Howard Carter</td>
<td>Imperial Oil</td>
</tr>
<tr>
<td>Dr. Anthony Ciccone</td>
<td>Jacques Whitford Environmental</td>
</tr>
<tr>
<td>Dr. Bruce Conard</td>
<td>INCO Ltd.</td>
</tr>
<tr>
<td>Ms. Lorraine Craig</td>
<td>University of Waterloo</td>
</tr>
<tr>
<td>Dr. Jan Czarnecki</td>
<td>Syncrude Canada</td>
</tr>
<tr>
<td>Dr. George Dixon</td>
<td>University of Waterloo</td>
</tr>
<tr>
<td>Mr. Geoff Granville</td>
<td>Shell Canada</td>
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<tr>
<td>Dr. Steve Hrudey</td>
<td>University of Alberta</td>
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<tr>
<td>Dr. Roger Keefe</td>
<td>Imperial Oil</td>
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<tr>
<td>Mr. Robert Kent</td>
<td>Environment Canada</td>
</tr>
<tr>
<td>Dr Warren Kindzierski</td>
<td>University of Alberta</td>
</tr>
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NERAM STEERING COMMITTEE (2)

Dr. Daniel Krewski  
University of Ottawa
Dr. William Leiss  
Queen’s University
Dr. Stephen Macdonald  
Health Canada
Dr. Douglas Powell  
University of Guelph
Dr. John Shortreed  
University of Waterloo
Mr. Adam Socha  
Ontario MOE
Dr. Robert Willes  
CANTOX Environmental