



# ETHICAL DIMENSIONS OF PRODUCING AND USING EVIDENCE TO INFORM POLICY IN A WORLD OF EVER-EXPANDING ENVIRONMENTAL HEALTH INEQUALITIES

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# ACKNOWLEDGMENT AND DISCLOSURE

Based on a plenary presentation to the  
*International Society for Environmental Epidemiology (ISEE)*  
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- *I strive for professional service in the public interest and have served as an expert witness in litigation on behalf of plaintiffs in the past, monies from which generally went into a University-managed research account; AND*
- *As a professional legacy, I have been bankrolling the IJPC-SE as a voluntary professional society for the past four years, hoping that it will become self-sustaining and enduring in 2016.*

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# EPIDEMIOLOGY

As defined in *The Dictionary of Epidemiology*, we study a health problem with a view to applying the knowledge gained to control the problem.

→ The logical upstream determinant of control *per se* lies in well-formulated, evidence-based policy. Epidemiology is the science that informs policy ... by bridging toxicology to human health.

YET, HOW WELL DO WE  
TRANSLATE OUR KNOWLEDGE IN  
THE PRESENCE OF UNCERTAINTY?

**AND WHAT ACCOUNTS FOR THE  
DEGREE OF UNCERTAINTY?**

# WHILE EPIDEMIOLOGISTS DO THEIR RESEARCH

- **Who takes the risks and who derives the benefits?**
- **Does the burden of proof of safety lie on the proponent of a new product, or on John and Jane Public ... constituting a “body count”?**

# HILL CONCLUDES ... (1965)

**“All Scientific work is incomplete – whether it be observational or experimental.**

**All scientific work is liable to be upset or modified by advancing knowledge.**

**That does not confer upon us a freedom to ignore the knowledge we already have, or to postpone the action that it appears to demand at a given time.”**

# WORKING AT THE NEXUS OF RESEARCH AND POLICY

**There are many forces, or drivers, at play in working to inform policy in order to maintain and improve population health.**

- **“Ideology” is one class of such drivers.**
- **“Financial conflicting interests” is another class.**
- **Both are integral to our personal contextual narratives (i.e., the dominant paradigm that defines the story of our lives ... that which gives meaning to us as individuals in society).**



AND THEN THERE IS THE  
APPLICATION OF OUR SCIENCE,  
WITH ITS VARIOUS PARADIGMS,  
THAT OPERATES WITHIN THESE  
DRIVERS

**Consider two paradigms available to us  
in environmental epidemiology:**

# NEWTONIAN VS. COMPLEXITY PARADIGMS

**Reductionism vs. Holism**

**Predictability vs. unpredictability**

**Linear vs. non-linear**

**Uncertainties acknowledged**

**Deterministic vs. non-deterministic**

**System equilibrium vs. instability**

*Newtonian assumptions hardly ever apply in the real world. “Newtonian” tends to be quantitative, and “Complexity” is addressed more qualitatively.*

# PROFESSIONAL INTEGRITY / ETHICS / MORALITY / LAW:

- **The defining influences in our behaviour / conduct / choices as people ... and as research scientists ... is the social context in which we live, work and play.**

# EPIDEMIOLOGY AS AN APPLIED SCIENCE

**Because it is possible to manipulate experimental and control groups in ways that introduce bias and thus fail to serve the public interest through the pursuit of truth (as expected of scientists), it is more and more recognized that ethical training and oversight are crucial.**

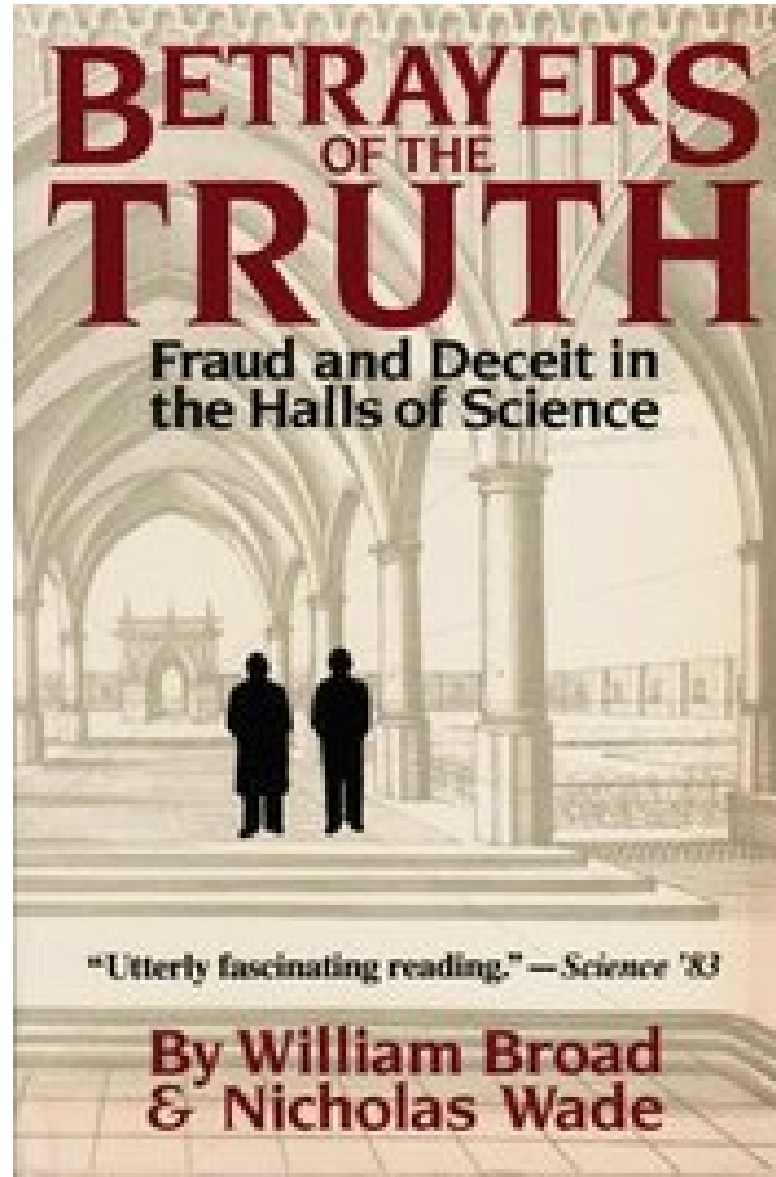
**Our ethics and values determine in large part our behaviours and the choices we make.**

# BIASES COUNTER TO THE PUBLIC INTEREST

- **Publication Bias**
- **Suppression Bias**
- **Repression Bias**
- **Funding Bias**

# FIRST, A REALITY CHECK ...

# IN 1982 ... EXAMPLES ... FROM GALILEO AND MANY MORE



# EXAMPLES OF MISCONDUCT AND DISHONESTY FROM THE BASIC AND PHYSICAL SCIENCES

- **Ptolemy who took the credit from another Greek astronomer, Hipparchus**
- **Galileo, father of empiricism, whose experiments defied replication**
- **Newton who, from his lofty seat as president of the Royal Society, accused Leibniz of plagiarism while doctoring supporting measurements to make his own Principia more persuasive**



**The book argues that the conventional wisdom that science is a strictly logical process, with objectivity the essence of scientists' attitudes, errors being speedily corrected by rigorous peer scrutiny and replication, is a mythical ideal.**

# NATIONAL ACADEMY OF SCIENCES, WASH., DC (1992)

## RESPONSIBLE SCIENCE: ENSURING THE INTEGRITY OF THE RESEARCH PROCESS

- PANEL ON SCIENTIFIC RESPONSIBILITY AND THE CONDUCT OF RESEARCH
- COMMITTEE ON SCIENCE, ENGINEERING, AND PUBLIC POLICY

*“THE RIGHT TO SEARCH FOR TRUTH IMPLIES ALSO A DUTY; ONE MUST NOT CONCEAL ANY PART OF WHAT ONE HAS RECOGNIZED TO BE TRUE”*

– ALBERT EINSTEIN

# ETHICAL CHALLENGES TO RISK SCIENTISTS: AN EXPLORATORY ANALYSIS OF SURVEY DATA, 1994

**Greenberg M and Goldberg L**

***Surveys of almost 1,500 members of three professional societies that do risk analysis (e.g. environmental economics, epidemiology, exposure assessment, industrial hygiene, toxicology) found that 3 in 10 respondents had observed a biased research design, 2 in 10 had observed plagiarism, and 1 in 10 observed data fabrication or falsification.***

# DANIELE FANELLI , 2009

## How Many Scientists Fabricate and Falsify Research? **A Systematic Review and Meta-Analysis of Survey Data**

This is the first meta-analysis of surveys asking scientists about their experiences of misconduct. It found that, on average, **about 2% of scientists** admitted to have fabricated, falsified or modified data or results at least once ... and up to **one-third** admitted a variety of other questionable research practices including “dropping data points based on a gut feeling”, and “changing the design, methodology or results of a study in response to pressures from a funding source”. In surveys on the behaviour of colleagues, questionable practices were reported in up to 72%.

# THE NORMAL RANGE OF HUMAN CONDUCT



**POWER CORRUPTS. ABSOLUTE POWER  
CORRUPTS ABSOLUTELY!**

(Lord Acton's premise)

**NO ONE IS IMMUNE!**

# THE ROLE OF ANY PROFESSIONAL SOCIETY

***TO SERVE AS A TRANSPARENT VOICE FOR ADVANCING THE DISCIPLINE BY PROVIDING A FORUM TO KEEP OUR HOUSE IN ORDER BY:***

- **Facilitating networking to maximize engagement at multiple levels and scales in the public interest**
- **Fostering the development of uni-, multi- and trans-disciplinary research methods**
- **Maximizing personal and professional integrity in both research and practice by setting normative standards for ethics, peer over-site, and accountability**
- **Providing a public face**

# PROFESSIONAL SOCIETY CORE VALUES & MISSION STATEMENTS

- They provide the anchor for our activity and collective motivation
- In **EPIDEMIOLOGY**, one aspect is to:

*... maintain, enhance, and promote health in communities worldwide ... work to protect the public health interest above any other interest ...*

# WHY ETHICS IN THE PROFESSIONS?

- **Keep ourselves on track and keep our house in order**
- **Socialize our students**
- **Professional accountability**
  - **According to norms of behaviour**

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***And, while we do our research***

- **IN WHOSE BEST INTERESTS?  
WHO IS TAKING THE RISKS?  
WHO IS DERIVING THE BENEFITS?**



**All sorts of pressures operate on the applied health scientist ... and have implications in the policy realm**

# SCIENCE IS BUT ONE SUCH PRESSURE ON POLICY-MAKERS

→ **HUMILITY AND EMPATHY  
FOR THE POLICY-MAKER**

*... Our job in science is to do the best  
possible science ...*

→ **There are many**  
**competing interests**  
**in the work done by**  
**epidemiologists**

# PERVASIVE INFLUENCES AND PRESSURES ON SCIENTISTS

- **From funding sources to peer review**
- **From the questions we ask through access to data**
- **From study design to data analysis and interpretation**
- **From dissemination to job security**

TO UNDERSTAND INFLUENCE  
AND ITS IMPACT WE MUST  
UNDERSTAND

- **The Dominant Paradigm**
- **The Contextual Narrative**
- **The Role of Impartial Science  
in the Public Interest**

# DEONTOLOGY (I.E. DUTY-BASED ETHIC)

**In essence, the scientific ethic expects of scientists the duty to:**

- 1. Use appropriate methods**
- 2. Be objective**
- 3. Be honest in reporting**
- 4. Publish results – POSITIVE, NEUTRAL and NEGATIVE**
- 5. Prohibit distortion in, for example:**
  - Falsification of data
  - Biases inherent to study design
  - Proper analytical procedures
  - Objective interpretation
- 6. Do one's own work:**
  - Plagiarism
  - Acknowledge sources
  - Graduate students not to be exploited

**GOOD ETHICS ↔ GOOD SCIENCE**

# ETHICS GUIDELINES FOR ENVIRONMENTAL EPIDEMIOLOGISTS

- I. OBLIGATIONS TO RESEARCH PARTICIPANTS**
- II. OBLIGATIONS TO SOCIETY**
- III. OBLIGATIONS TO SPONSORS AND EMPLOYERS**
- IV. OBLIGATIONS TO COLLEAGUES**

[http://iseepi.org/About/Docs/ethics\\_guidelines\\_adopted\\_april\\_25\\_2012.pdf](http://iseepi.org/About/Docs/ethics_guidelines_adopted_april_25_2012.pdf)

# THE FUNDAMENTAL PRINCIPLES OF BIOETHICS INCLUDE

## RESPECT FOR AUTONOMY

- Requires respect for individual rights and freedoms (Also: **Veracity & Fidelity**)

## BENEFICENCE

- Requires doing good / Consider consequences of interventions in people's lives

## NON-MALEFICENCE

- Requires doing no harm

## SOCIAL AND DISTRIBUTIVE JUSTICE

- Requires fair and equitable allocation (of risks & benefits) to all without discrimination



# THE FUNDAMENTAL PRINCIPLES OF BIOETHICS (UNDER JUSTICE) INCLUDE

## ENVIRONMENTAL JUSTICE PRINCIPLE

- *Who is taking the risks?*
- *Who is deriving the benefits?*

## THE POLLUTER PAYS PRINCIPLE

*Incentives to internalize costs*

## THE PRECAUTIONARY PRINCIPLE

*Act to prevent, even if evidence is limited*

## THE SEVENTH GENERATION PRINCIPLE

*Consequences seven generations hence*

# PRIMARY PRINCIPLES IN PUBLIC HEALTH

**Protect the most vulnerable in society** (e.g., unborn, children, Inuit, frail elderly) - **beneficence**

**Involve communities in our research** (ensure community relevance of our work) - **autonomy**

**Integrity in Public Health** (serve the public health interest above any other interest) - **beneficence and non-maleficence**

WHAT ARE WE UP AGAINST,  
GIVEN THESE PRINCIPLES?

**What creates/drives misconduct in science?**

**What tempts scientists away from the pursuit  
of truth?**

**How does misconduct derail scientific  
discourse?**

**How does misconduct influence public policy  
and hence population and global  
environmental health?**

**Confrontation, and the challenge of speaking  
truth to power!**

# THE GOLDEN RULE - ADAPTED

- **What is hateful unto you, do not do unto your neighbour**  
*Hillel, Babylonian Talmud, Tractate Shabbat, 31B*
- **Treat others as we would want them to treat us or our loved ones**  
*Luke 6:31 and Matthew 7:12*
- **Treat others justly so that no one would be unjust to you**  
*From the Prophet Mohamed's Last Sermon*

- 
- **Do our level best**
  - **Assert ourselves if we find that someone has done ill**

# NOW, IN PRACTICE ...

**“Industry’s offensive against the regulation of health and safety hazards uses academics to downplay or deny the seriousness of the hazards...”**

**Clayson and Halpern**  
**J. of Public Health Policy**  
**September, 1983**

# THE FOUR D'S APPLIED TO SCIENTISTS STUDYING THAT WHICH DOES NOT SUPPORT THE *STATUS QUO*

- **Deny**
- **Delay**
- **Divide**
- **Discredit**

➤ **[ Dismiss ]**



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# THE TEFLON TOXIN, DUPONT, AND THE CHEMISTRY OF DECEPTION

Sharon Lerner, August 17, 2015

*Teflon toxin case against DuPont (Part 1),*

<https://firstlook.org/theintercept/2015/08/17/teflon-toxin-case-against-dupont/>

*DuPont and the Chemistry of Deception (Part 2),*

<https://firstlook.org/theintercept/2015/08/11/dupont-chemistry-deception/>

*In Part 1, see reference to testimony of Douglas Weed:*

*The deposition of a DuPont expert named Douglas Weed suggests a possible line of attack: that Bartlett, who lives just a few miles downriver from the DuPont plant, developed the cancer because she's overweight. Or, perhaps, just by chance.*

*The role of luck — that two things often correlate just by chance — was a major point of Weed's testimony, for which DuPont paid the former employee of the National Cancer Institute more than \$100,000. During his deposition in March 2015, the doctor estimated that since leaving the government agency eight years ago he has made between \$5 million and \$6 million providing expert testimony to companies in such corporate defense cases.*

*Weed also testifies on the harmlessness of chrysotile asbestos.*

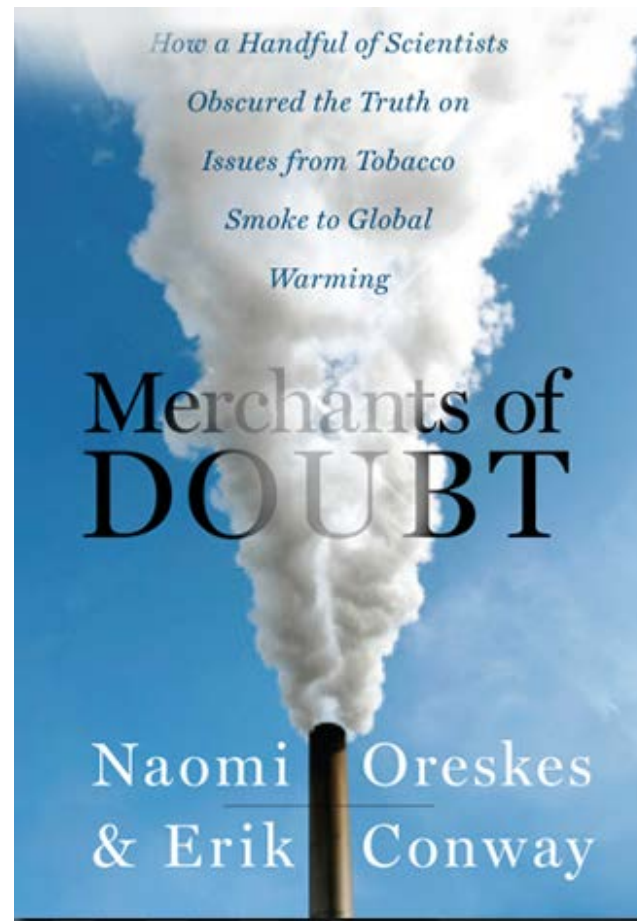
BUT, TEMPTATION LURKS ...

# MANUFACTURING DOUBT

- ▶ **Samuel Epstein.**  
*The Politics of Cancer*, 1978
- ▶ **Devra Davis.**  
*When Smoke Ran Like Water: Tales of Environ Deception ...*, 2002  
*The Secret History of the War on Cancer*, 2007  
*Disconnect: The Truth About Cell Phone Radiation ...*, 2010
- ▶ **David Michaels.**  
*Doubt is their Product: How Industry's Assault on Science...*, 2008
- ▶ **McCulloch & Tweedale.**  
*Defending the Indefensible: The Global Asbestos Industry ...*, 2008

The policy-maker's conundrum ▶ **the fomentation of uncertainty by vested interests.** By increasing uncertainty, the policy-maker's ability to implement health policy is made all the more difficult.

# MERCHANTS OF DOUBT: HOW A HANDFUL OF "SCIENTISTS" OBSCURED THE TRUTH ON ISSUES FROM TOBACCO SMOKE TO GLOBAL WARMING



*Also made into a  
movie...  
Released in 2015*

SOME LESS RECENT AND  
MORE RECENT EXPOSÉS

OF RELEVANCE TO OUR  
TOPIC

AND THAT WE CANNOT  
DENY

JUDGE MILES W. LORD, MINN, 1982

**ON CORPORATE ETHICS AND ENVIRONMENTAL  
POLLUTION:**

*“Corporations create 80% of our GNP. They, of all entities working, have the most potential for good or evil in our society.”*

**This was in 1982. Today it is surely more like 90%**

# TOBACCO EXAMPLE IS BEST KNOWN

- **Full circle – ~50-year story now told**
- **Disinformation campaigns**
- **Lies, manipulation, deceit**
- **Co-option or appropriation of scientists to lie. Is this bad in itself?**
- ***The real tragedy is that scientists accept these monies and then proceed to please their sponsor.***

HE WHO PAYS THE PIPER  
CALLS THE TUNE ...

A tension emerges between:

TEMPTATION TO ACCEPT LUCRATIVE  
AMOUNTS FOR SERVING SPECIAL  
INTERESTS

VS.

OBLIGATION AS EPIDEMIOLOGISTS  
TO PURSUE TRUTH IN THE PUBLIC  
INTEREST



# ANNALS OF INTERNAL MEDICINE, 1996

## MAKER-SPONSORED STUDIES ARE FAVORABLE TO PHARMA

*Drug studies published in symposia sponsored by pharmaceutical companies are more likely to show positive results about the drug than studies not backed by drug makers, researchers report.*

## CORPORATE CRIME

# Enron executive begins 5½-year prison term

*The Associated Press*  
HOUSTON

Former Enron Corp. executive Richard Causey has reported to prison to begin serving 5½ years for his role in the company's collapse, according to the Federal Bureau of Prisons.

Causey, 46, was listed Wednesday on the prison bureau's website as an inmate in the Bastrop Federal Correctional Institution, about 50 kilometres southeast of Austin.

Causey, the former chief accounting officer who pleaded guilty in 2005 shortly before he was scheduled to be tried

with other top Enron executives, had been listed on the website late Tuesday as "in transit."

Calls to the low-security prison weren't immediately returned early Wednesday.

The *Houston Chronicle* reported Tuesday that Causey, 46, was about to begin the term he was sentenced to in November for securities fraud.

His guilty plea came two weeks before he was to be tried along with Enron founder Kenneth Lay and former CEO Jeffrey Skilling on conspiracy, fraud and other charges related to the company's collapse. Causey admitted that he and other senior Enron managers made var-

ious false public findings and statements.

Enron, once the seventh-largest U.S. company, crumbled into bankruptcy proceedings in December 2001 after years of accounting tricks could no longer hide billions in debt or make failing ventures appear profitable. The collapse wiped out thousands of jobs, more than \$60 billion in market value and more than \$2 billion in pension plans.

After Causey serves his prison sentence, he will also have to serve two years' probation and pay a \$25,000 fine that will be distributed to Enron's victims.

# ON DENYING CLIMATE CHANGE

AMONG OTHERS:

## Bjorn Lomborg (Denmark)

- *The Skeptical Environmentalist* (2001)

## The Koch Industries (USA)

- Powerful interests (in particular, oil)
- One subsidiary is Georgia-Pacific (asbestos)
- Contributes fortunes to sustain what are called “right-wing” or neo-liberal think tanks whose work is often used to foment uncertainty

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▶ ***Sociopaths (i.e., power-crazed con artists with no social conscience)?***



7 December 2006 11:56

## Exxon spends millions to cast doubt on warming

By Andrew Buncombe in Washington and Stephen Castle in Brussels

Published: 07 December 2006

The world's largest energy company is still spending hundreds of thousands of dollars to fund European organisations that seek to cast doubt on the scientific consensus on global warming and undermine support for legislation to curb emission of greenhouse gases.

Data collated by a Brussels-based watchdog reveals that ExxonMobil has put money into projects that criticise the Kyoto treaty and question the findings of scientific groups. Environmental campaigners say Texas-based Exxon is trying to influence opinion-makers in Brussels because Europe - rather than the US - is the driving force for action on climate change.

"ExxonMobil invests significant amounts in letting think-tanks, seemingly respectable sources, sow doubts about the need for EU governments to take action to reduce greenhouse gas emissions," said Olivier Hoedeman, of the Corporate Europe Observatory. "Covert funding for climate sceptics is deeply hypocritical because ExxonMobil spends major sums on advertising to present itself as an environmentally responsible company."

It has long been known that the oil giant, which in 2005 recorded an all-time record for quarterly income, has spent millions of dollars to fund climate sceptics. Exactly how much is unknown but some estimates suggest \$19m (£9.7m) since 1998.

In its 2005 report, Mr Hoedeman's group details payments by ExxonMobil to two organisations the International Policy Network, which received \$130,000 and the Centre for the New Europe (CNE), which received \$50,000.

The Observatory suspects Exxon has also funded other groups engaged in undermining legislation. Its report said: "There is mounting evidence that many EU-focused think-tanks are heavily funded by corporations and this raises serious concerns about their agenda and their independence." The two groups cited in the report have long been accused of denying climate change. Greenpeace's ExxonSecret website notes that in 2004 the network issued a press release criticising the Intergovernmental Panel on Climate Change, saying it had "intentionally exaggerated its estimates of temperature increases by using highly implausible scenarios of future growth in emissions of greenhouse gases".

Greenpeace also lists a 2004 posting on CNE's website which claimed: "The Kyoto Protocol is failing because it is ineffective, costly, and unfair. It is also 'scientifically flawed'."

Last year The Independent revealed how a US-based lobbying group which received substantial funding from Exxon was seeking to develop a Europe-wide network of think-tanks, journalists and major businesses to act against legislation to counter climate change. The organisation claimed its approaches had been flatly rejected.

Kert Davies of Greenpeace said: "Europe is leading the world right now in terms of climate policy. Exxon know that if they can [enlist] lobbyists they may be able to slow things down. That is the tactic right now."

Such is the concern about ExxonMobil that earlier this year the Royal Society, considered Britain's leading scientific academy, wrote to it asking that it stop funding groups that have "misrepresented the science of climate change by outright denial of the evidence".

Elen Bisnath, a network spokeswoman, confirmed that the organisation had accepted \$130,000 from the oil company. She said: "We are an independent think-tank and we are contributing to the scientific debate on climate change."

# SOME RECENT DEVELOPMENTS TO TAME GOLIATH

BENZENE AND WORKER CANCERS:  
'AN AMERICAN TRAGEDY', DEC. 2014

# Internal documents reveal industry 'pattern of behavior' on toxic chemicals

*A pattern of concealment from workers ...*

By David Heath and Jim Morris

<http://www.publicintegrity.org/2014/12/04/16330/internal-documents-reveal-industry-pattern-behavior-toxic-chemicals>

# CENTER FOR PUBLIC INTEGRITY

[WWW.PUBLICINTEGRITY.ORG](http://WWW.PUBLICINTEGRITY.ORG)

- **Industry Muscle Targets Federal Report on Carcinogens July 30, 2013**

• *“Industry attacks on Public Health research have become more strident.”*

**Linda Birnbaum, Director, US-NIEHS**

# NUTRITION SCIENTISTS ON THE TAKE FROM BIG FOOD

A report and article on how supposedly independent, scientific organisations and publications concerned with public health have betrayed their mission and the public interest by allowing financial conflicts of interest to influence their work and their policies.

- **Nutrition Scientists on the Take from Big Food. Has the American Society for Nutrition lost all credibility? Michele Simon, June 2015** <http://www.eatdrinkpolitics.com/wp-content/uploads/ASNReportFinal.pdf>
- **Is the Leading Nutrition Science Group in Big Food's Pocket? Mother Jones, Luke Whelan, June 15, 2015,** <http://www.motherjones.com/blue-marble/2015/06/big-food-has-more-influence-nutritional-science-then-you-think>

Michele Simon is a public health lawyer specializing in legal strategies to counter corporate tactics that harm the public's health. She is with [www.eatdrinkpolitics.com](http://www.eatdrinkpolitics.com)



# "SUM OF US" ON MONSANTO

## JUNE 29, 2015 (1 OF 2)

Monsanto, one of the world's most evil corporations, just keeps getting worse. **Monsanto's latest victims? Poverty-stricken Indian farmers.**

In 2012, 13,754 farmers in India committed suicide. That's one suicide every 38 minutes.

**Why? Massive, crippling debts, made worse by exorbitant annual fees charged by Monsanto for GMO seeds.**

Monsanto's GMO crops were introduced in India in 2002, and since then there's been a sharp rise in the suicide rate among Indian farmers -- and it's not hard to see why. For centuries, farmers made a living by saving seeds from one year's crop to the next.

**But today, Monsanto is claiming patent rights over seeds -- the fundamental source of all plant life -- and forcing farmers to pay for new seeds every single year.**

The result is a crippling cycle of poverty, from which farmers see no way out.

# ONE CURRENT EXAMPLE OF DAVID (INDIAN FARMERS) VS. GOLIATH (MONSANTO) (2 OF 2)

Mega-corporations like Monsanto act like they can destroy people's lives as long as they're improving shareholder returns. But **time and again Sum of Us is showing these corporations that they will shine a light on the practices they want to hide in the shadows.**

As Vandana Shiva has said, **when corporations control seeds, they control life.** Monsanto is taking a renewable common resource and turning it into a non-renewable, patented commodity.

We know that Indian farmers can't fight Monsanto alone. That's why SumOfUs was created -- to leverage the global power of consumers from around the world to fight multinational corporations together.

**The Center for Public Integrity, Columbia University's Mailman School of Public Health and The Graduate Center at the City University of New York** are making public some 20,000 pages of benzene documents – the inaugural collection in Exposed, a searchable on-line archive of previously secret oil and chemical industry memoranda, emails, letters, PowerPoints and meeting minutes that will grow over time.

# NEW GROUP AIMS TO REVEAL TRUTHS, PROTECT WHISTLEBLOWERS

Like WikiLeaks, but better:

<http://www.takepart.com/article/2014/06/04/whistleblowers>

***What separates a democracy from a dictatorship?***  
Government transparency, among other things. The new organization's mission is to “shed light on concealed activities that are relevant to human rights, **corporate malfeasance, the environment**, civil liberties, and war” by calling on Americans to share “official information—whether governmental or corporate—that the public has a right to know.” The bottom line for **ExposeFacts** is in its tagline: ***Whistleblowers Welcome.***

# WE MUST NOT BE NAÏVE

*Be aware of forces at play that influence both science and policy.*

*... Great vigilance and personal integrity are required to counter the influence of financially interested parties and corrupt / morally bankrupt governments.*

# HUMAN AND SYSTEM FRAILTIES

- **Junk science: Our professional obligation to be vigilant and especially careful in peer review**
- **Need for oversight (as in Human Research Ethics Boards/IRBs)**
- **The need to keep ourselves on track with ETHICS GUIDELINES and related professional activities**

# RELENTLESS PRESSURE FROM VESTED INTERESTS

- **Manoeuvre their way onto review panels, influence Boards of our professional associations, and infiltrate the literature with junk science**
- **Expert witness tensions arise between the plaintiff and defence sides of the argument in tort actions where the rubber hits the road concerning policy decisions**
- **David vs Goliath?**
- **Current major initiative of the IJPC-SE is its Working Group on *Conflict-of-Interest and Disclosure***

# IJPC-SE AND ITS MISSION:

- **Volunteer-driven, not-for-profit consortium, currently comprising 20 national and international member-professional societies/associations**
- **Impartially generate, report and apply epidemiological methods to the formulation, implementation and evaluation of evidence for use in informing health policy**



# IJPC-SE GOAL & APPROACH

- **Goal is to serve the public interest by informing health policy and related areas of endeavour through its work at the nexus of research and policy**
- **Coordinates inter-professional society activities that are related to research and practice in the generation of evidence, as well as in evidence-based policy application, formulation, implementation and evaluation**
- **Promotes epidemiological best practices to inform policy**

# IJPC-SE BRIEF HISTORY

- Formed in Seattle in 2006 at the 2<sup>nd</sup> (5-yearly) North American Congress of Epidemiology
- It is now in its 9<sup>th</sup> year of operation
  - 1<sup>st</sup> Chair: **Roberta Ness** (2006 - 2007)
  - 2<sup>nd</sup> Chair: **Susan Sacks** (2008 - 2009)
  - 3<sup>rd</sup> Chair: **Stanley H. Weiss** (2010 - 2014)
  - 4<sup>th</sup> Chair: **Colin L. Soskolne** (2014 - 2016)
  - 5<sup>th</sup> Chair-Elect: **Wael Al-Delaimy** (2016 - ?)
- Website, Founding Bylaws, related policy documents, and Not-for-Profit status set in motion in 2012-2015
- A major initiative recently was the launch in 2012 of the IJPC-SE *Position Statement on Asbestos*

# ON THE IJPC-SE 2012 POSITION STATEMENT ON ASBESTOS

***“The IJPC Position Statement on Asbestos was an important act of collaboration and leadership by societies of epidemiology in calling for national and international policy to be based on the scientific evidence. While the asbestos industry spends millions of dollars on marketing and political lobbying, they are losing the battle of credibility, thanks to organizations such as the IJPC-SE speaking up to defend epidemiologic evidence and public health policy. More organizations have since joined the IJPC-SE, in part, I believe, because they see that the IJPC-SE is playing a positive and meaningful role in serving the public good.”***

***Kathleen Ruff, quoted in The Epidemiology Monitor, June 2015***

# CLASSICAL TECHNIQUES THAT SKEW RESULTS: FROM BIASED METHODS TO JUNK SCIENCE

- **Under-powered studies**
- **Inadequate follow-up methods**
- **Inadequate follow-up time**
- **Contaminated controls**
- **Unbalanced discussion**
- **Selective disclosure of competing interests**
- **Linear reductionism without post-normal science to complement quantitative methods**

# CLASSICAL TECHNIQUES THAT SKEW RESULTS<sup>69</sup>

- Biased/selective interpretation
- Mechanistic information is ignored for inferring effects
- Exaggerated differences are made between human and toxicology studies, the insistence being on separating effects seen in animals from effects in humans
- The fact that molecular structures predict hazard potential is ignored

# TECHNIQUES THAT SKEW POLICY

- The insistence on first demonstrating effects in local populations of exposed people despite demonstrated effects in humans elsewhere
- The failure to make explicit the implicit value judgements that go into deciding appropriate standards of evidence for drawing policy-relevant conclusions (i.e., suppressing dominant interests and values)

**Cranor C. *Legally Poisoned: How the Law Puts Us at Risk from Toxicants* (Harvard University Press, 2011)**

## IJPC-SE'S CURRENT INITIATIVE

**A current initiative of the IJPC-SE is to create a position statement on conflict-of-interest and disclosure.**

**The need to address conflict-of-interest and disclosure issues more forthrightly was brought about by high-profile failures of epidemiologists to fulfill norms and expectations in these areas.**

# THE WAY FORWARD

**True democracy through a well-informed public, underscored by an improved government science, technology and innovation strategy that should:**

- Offer ***incentives*** to non-profit professional organizations in support of capacity-building to expose junk science, particularly where applied science works at the nexus of policy; and
- Introduce ***disincentives*** (i.e., regulatory penalties) for those engaging in producing junk science.



# VIRTUE ETHICS ...

- **Wisdom is knowing what to do next; virtue is doing it.** *David Star Jordan*
- **What is right is often forgotten by what is convenient.** *Bodie Thoene*
- **It is curious that physical courage should be so common in the world and moral courage so rare.** *Mark Twain*

# CHARACTER VS. ACTIONS

**Virtues do not replace ethical rules. Rather, an account of professional ethics is more complete if virtuous traits of character are identified, such as:**

# EPIDEMIOLOGY AND VIRTUE ETHICS

(WEED DL, MCKEOWN RE. INT J EPIDEMIOL.; 1998 - ADAPTED)

- **Humility** – Respect the input and opinions of others /Self-effacement
- **Fidelity** – Honour one's commitments /Promote trust
- **Justice** – Act fairly
- **Patience** – Take time to hear others' viewpoints
- **Industry** – Do your level best /Excel
- **Veracity** – Tell the truth /Be honest
- **Compassion** – Empathize
- **Integrity** – Demonstrate good moral character
- **Serve** – Protect the most vulnerable /Serve the public interest
- **Prudence** – Err on the side of caution /Demonstrate good judgment

THANK YOU FOR YOUR  
ATTENTION

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