

**Science & Advocacy:
Flame retardants as a case study***

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21 April 2015

Science/Policy Pre-meeting to BFR 2015

Flame retardant time line (personal view)—**early history** (*Lots* more could be said here)

Science (selected!!)

Events/Policy

1966 PCBs in bird eggs

1962 *Silent Spring*

~1960s FR added to products

1970s TB 117

1973- PBBs in Michigan

1976 TSCA (ineffective)

1977-8 "Tris": mutagen &
kids pajamas

1978 Love Canal

1980- "Dioxin" meetings

1980s incinerator "wars"

1980s- PCB neurotoxicity

1990s- endocrine disruption

Flame retardant time line (personal view)-recent history

1998 PentaBDEs trend in Swedish breast milk

2002 PentaBDE neurotox (rodents)

2002- high PBDEs in USA

2005- indoor pathway

2008- SVOC papers

2009- replacement FRs in dust, e.g., PFRs

2009- PentaBDE neurotox epidemiology*

2011- products

2003-4 "Bans" on PentaBDE
~2004- state Deca campaigns

2009 Stockholm Convention addition
~ 2010- TB117 effectiveness?
2012 Chicago Tribune
2012-3 TB117-2013

Some thoughts:

- **Some landmark scientific studies paved the way for continuing science *and* policy—e.g., Swedish breast milk study**
- **The BFR meetings have been very effective at bringing together environmental scientists**
- **PentaBDE “bans” before any significant epidemiology, largely based on alarming trends, some tox, PCB analogy**

Some thoughts:

- Some landmark scientific studies paved the way for continuing science *and* policy—e.g., Swedish breast milk study
- The BFR meetings have been very effective at bringing together environmental scientists
- PentaBDE “bans” before any significant epidemiology, largely based on alarming trends, some tox, PCB analogy
- “Whack a mole” cycle appears to be speeding up
- TB 117 effectiveness—environmental scientists & fire scientists did not (& still rarely) talk to each other
 - disciplinary boundaries
 - fire standards/tests are important
- *Chicago Tribune* series: What I think really caught public attention was scandal & corruption, something easier to understand than science
- Little “coordination” between scientists & advocates

**Science & advocacy:
something my students worry about a lot
(aimed at scientists)**

Two views:

1. Scientists should be advocates

Scientists know the most about their field and should take public advocacy positions. Don't just conclude papers by asking for more research.

***Not* the most extreme version of this position!**

2. Scientists should NOT be advocates

- Taking advocacy positions will compromise the fundamental role of the scientist: trying to understand how the world works as objectively as possible
- Scientists have no special expertise when it comes to policy decisions, which must weigh far more than just science (*Science & Citizen*).

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- **Scientists make poor advocates as they are/should be constantly questioning/critiquing their own results.***
("I wish I could find a one-handed scientist")

*** Exploited by "Merchants of doubt"**

Science & advocacy

- 1. Scientists should be advocates**
- 2. Scientists should NOT be advocates**

I think both views are respectable.

Thoughts if you lean towards #2:

- Scientists can better communicate their results (beyond scientific journals). Work with good science journalists.**
- Scientists do have some choice over the questions they investigate. Think about potential impact on both science & policy (even though we don't know what the answer to the question will be)**

A few things that concern me:

- **Focus by many advocates on halogenated FRs**
- **Focus by many advocates on bans and ignoring “remediation”**
- **Methods are more important than funding source (although the latter may tell you about the question)**
- **Not enough communication between fire scientists and environmental scientists about methodological details & results**

From earlier talk aimed at advocates (shortened)
I don't necessarily agree with them all!

Top 10 Reasons why we* generally don't get
involved in policy and activists more
(with suggested solutions)

* Academic environmental scientists

#10. We're incredibly busy: teaching, research, administration

#9. We don't know what you're doing on policy

#8. We don't know you & don't have the professional relationships that can lead to partnerships or even effective communication.

#7. There's nothing in it for us. You want things (e.g., precious time) but we get nothing back (e.g., resources).

#6. You want us to lend you our credibility, but...worst case: you call us at the last minute with insufficient preparation to support something that we might consider poorly designed.

#5. You ask us to speak beyond our expertise.

#4. Scientists are trained to be self-critical and to consider alternative explanations. Advocates can come across as exaggerating or cherry-picking the evidence to fit preconceived goals

#3. Scientists who become advocates may lose the respect of their peers

#2. Money talks. Not so much that scientists can be bought (although some probably are); it's that research is often directed by funding opportunities.

**#1. Scientist: Goal is to understand how the world works. Communicate that information.
Activist: Change.**

Expertise/Disciplinary Boundaries

