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***USEPA Workshop on Research
Needs for Community Based
Risk Assessment***

Closing Remarks

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A Brief Cumulative Risk History



- **1970s – knowledge without ability**
- **1983 – NRC Red Book**
- **1980s – Environmental Justice questions**
- **1996 – Food Quality Protection Act**
- **1996 – Browner Memo on Cumulative Risk**
- **1999 – Risk Assessment Forum Tech Panel on Cumulative Risk Assessment formed**
- **2000s – Pesticides assessments, NATA, DBPs, etc.**
- **2003 – Framework for Cumulative Risk Assessment**
- **2007 – RAF Case Studies Report**

Cumulative Risk Technical Panel Phase 2

- **Issue Papers** (*EHP* mini-monograph *Frontiers in Cumulative Risk Assessment*, Vol. 115 No. 5, May, 2007)
 - If Cumulative Risk Assessment Is the Answer, What Is the Question? (Callahan & Sexton)
 - A Phased Approach for Assessing Combined Effects from Multiple Stressors (Menzie et al)
 - Vulnerability as a Function of Individual and Group Resources in Cumulative Risk Assessment (deFur, et al)
 - Assessing Cumulative Health Risks from Exposure to Environmental Mixtures - Three Fundamental Questions (Sexton & Hattis)
 - Using Biomarkers to Inform Cumulative Risk Assessment (Ryan, et al)
- **Issues, Case Studies, and Research Needs in Cumulative Risk Assessment (late 2007)**

Why Should We Invest in Community Based Cumulative Risk Assessment?

- Communities are asking for it
- EPA's relevance with the public is at stake
- Fairness

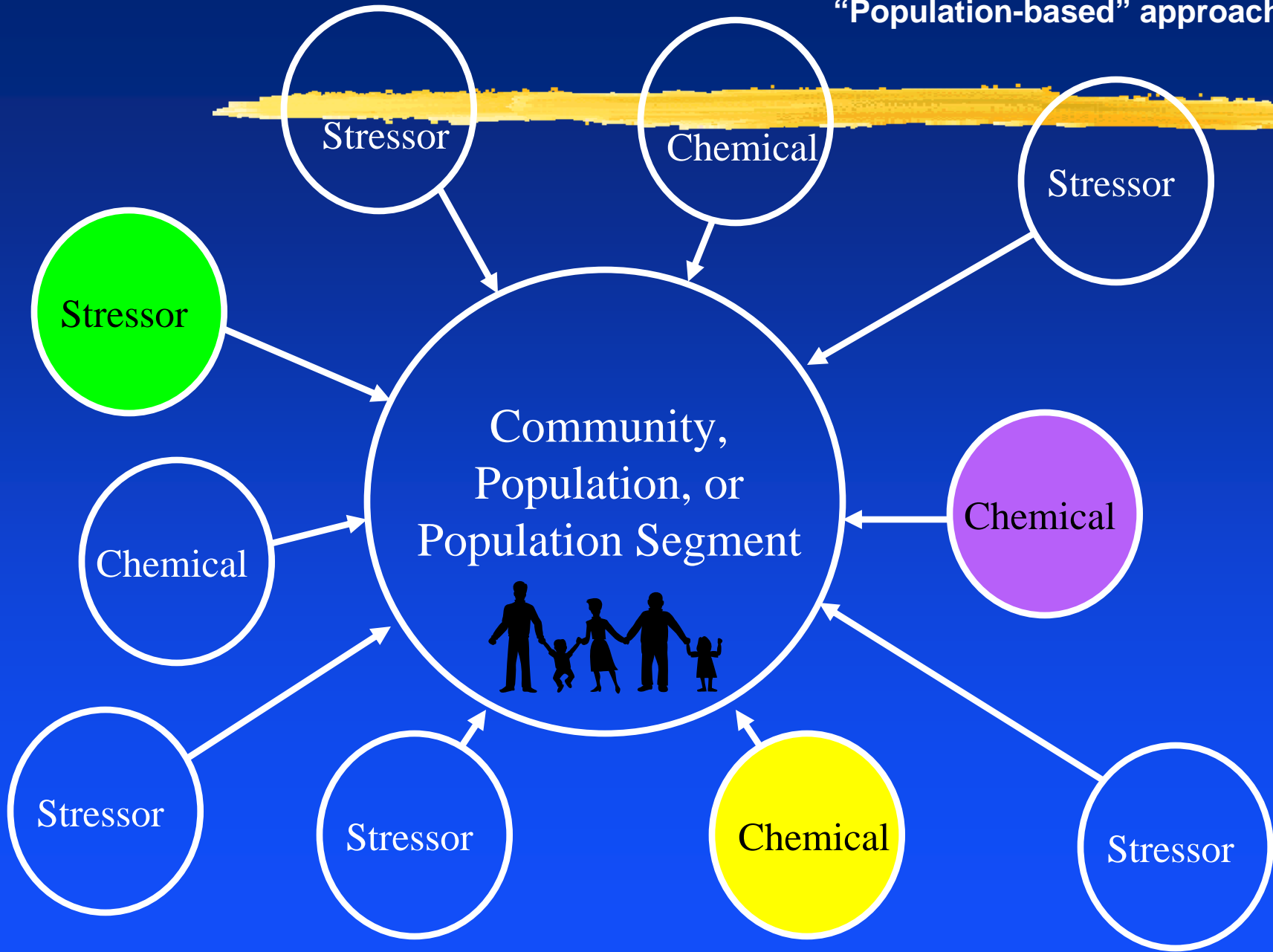
- What kind of investment?

Communities are asking for it



- NEJAC
- CARE
- Three communities in past two months in Region 6
- Not asking for “total risk”

“Population-based” approach



Communities are asking for it



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We can do some parts of it now

“Risk Assessment doesn’t work for us...”

- **Why? Some things are left out, e.g.,**

Cascading effects:

Eco: Erie Canal

Human: EJ Community

“Risk Assessment doesn’t work for us...”



- **Why? Some things are left out, e.g.,**

Non-conventional Stressors

Some Losses Potentially Not Covered...

Unreconciled Loss: Physical and Symbolic

Loss of land	Loss of language	Loss of spirituality
Loss of extended family relationships	Loss of sense of belonging	Loss of autonomy
Loss of rights	Loss of self-sufficiency	Loss of social structure
Loss of connection to land	Loss of culture and tradition	Loss of identity
Loss of sovereignty	Loss of history	Loss of control
Loss of cultural pride	Loss of community	Loss of trust

Loss of life: Multiple traumatic deaths related to disease, violence, genetic risk factors...

Source: Lemay and Piotrowski, 2002



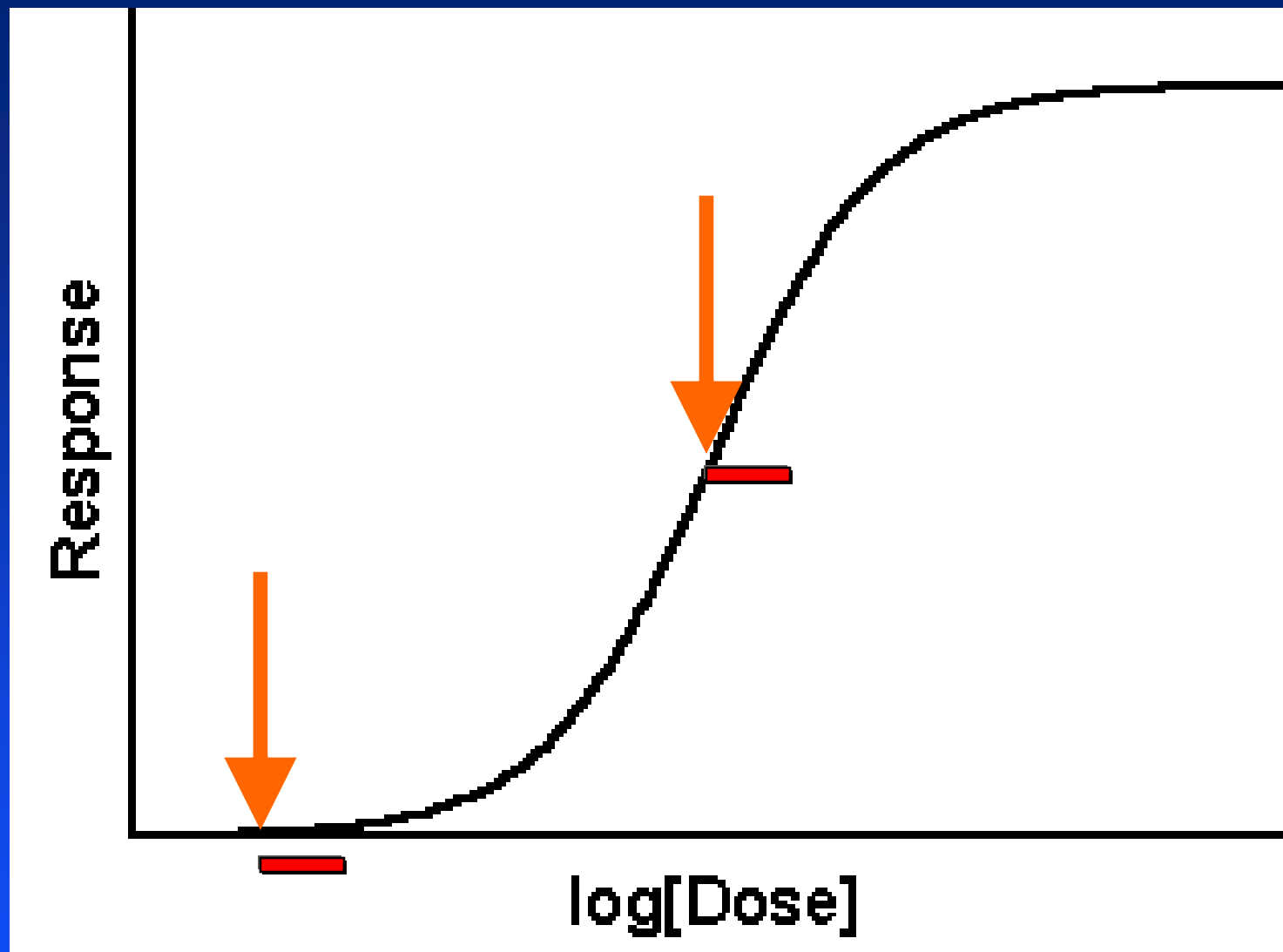
But what about “mission creep?”

Relevance/Credibility

- **EPA Priorities:**
 - Legislated mandates
 - Court orders
 - Political issues/Media circuses
 - Public need
- **Public needs:**
 - Federal government as a monolith
 - » Can't help with problem
 - » Paternalism = change the problem
 - » Understand and help
- **Risk assessments that consider part of the problem**

Fairness: Vulnerability

- **Vulnerability:** The state of being open to harm due to the inability to cope with a hazard because of biological susceptibility, prior exposure or disease state, or lack of the resources for resilience.
- **Vulnerability = Hazard + Inability to cope**
- **Vulnerability can mean that the exact same exposure can result in widely different effects**



Result of “Background” Exposure

Levels of Coping

- First Stage: *Non-erosive Coping*, includes insurance, risk-minimizing, loss management, loans, reduction in dietary intake, cheaper foods, reduction of meals, sale of small stock and non-productive assets
- Second Stage: *Erosive Coping*, includes disposal of productive assets, shark loans, sale of large livestock, land and tools, bonded labor arrangements, child labor
- Third Stage: *Failed Coping*, results in destitution, dependency on charity, out-migration, and in extreme cases prostitution, or even sale of children. (WHO, 1998)

What Type of Investment?

- **Needs:**
 - Methods – start with screening methods
 - Non-chemical stressors – what's important?
 - Vulnerability – What factors? How important?
- **Not all or nothing**

- **It starts step by step**

So Why Invest?



- Demand starting now and will increase
- Invest in Agency's relevance/credibility
- Fairness
- Not mission creep
- Can start to buy in at modest levels



Let's Go for It!