



# Collaborative Supply Chain Partnerships – Lessons Learned

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ECHA Substitution Strategy Workshop

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# Supply chain collaboration: A need and an opportunity

- Key finding in the Lowell Centre for Sustainable Production's 2016 capacity evaluation to support and advance substitution in the EU
- Both industry representatives and authorities elevated the importance of increased activity in this arena
  - Share information on alternatives
  - Share R&D needs and challenges
  - Establish new professional relationships
  - Raise the profile of innovation need and opportunity among technical support centres

# US experience with supply chain collaborations: Massachusetts Toxics Use Reduction Act

- Requires manufacturing firms to report on their use/throughput of listed toxic substances
- Requires every two years a plan to evaluate options to reduce or eliminate use of those substances
- Firms pay a fee on chemicals that supports voluntary technical assistance, research and engagement through the Toxics Use Reduction Institute

# Ways the MA Toxics Use Reduction Institute (TURI) engages supply chains

- Capacity building
  - Training/continuing education
  - Demonstration sites/projects
- Research support on safer alternatives for hazardous substances
  - Industry-academic grant research programs
- In-house testing and evaluation of alternatives
- Supporting supply chain consortia

# TURI Industry Collaborative Alternatives Assessment Initiatives

**Lead Reduction for Electronics Industry**  
Collaborative performance testing for safer alternatives to lead in electronics.

2001 to 2009

[http://www.turi.org/Our\\_Work/Business/Industry\\_Sectors/Electronics](http://www.turi.org/Our_Work/Business/Industry_Sectors/Electronics)



**Hex Chrome Reduction for Aerospace/Defense Industry**

Collaborative performance testing for safer alternatives to hex chrome free in aerospace/defense applications.

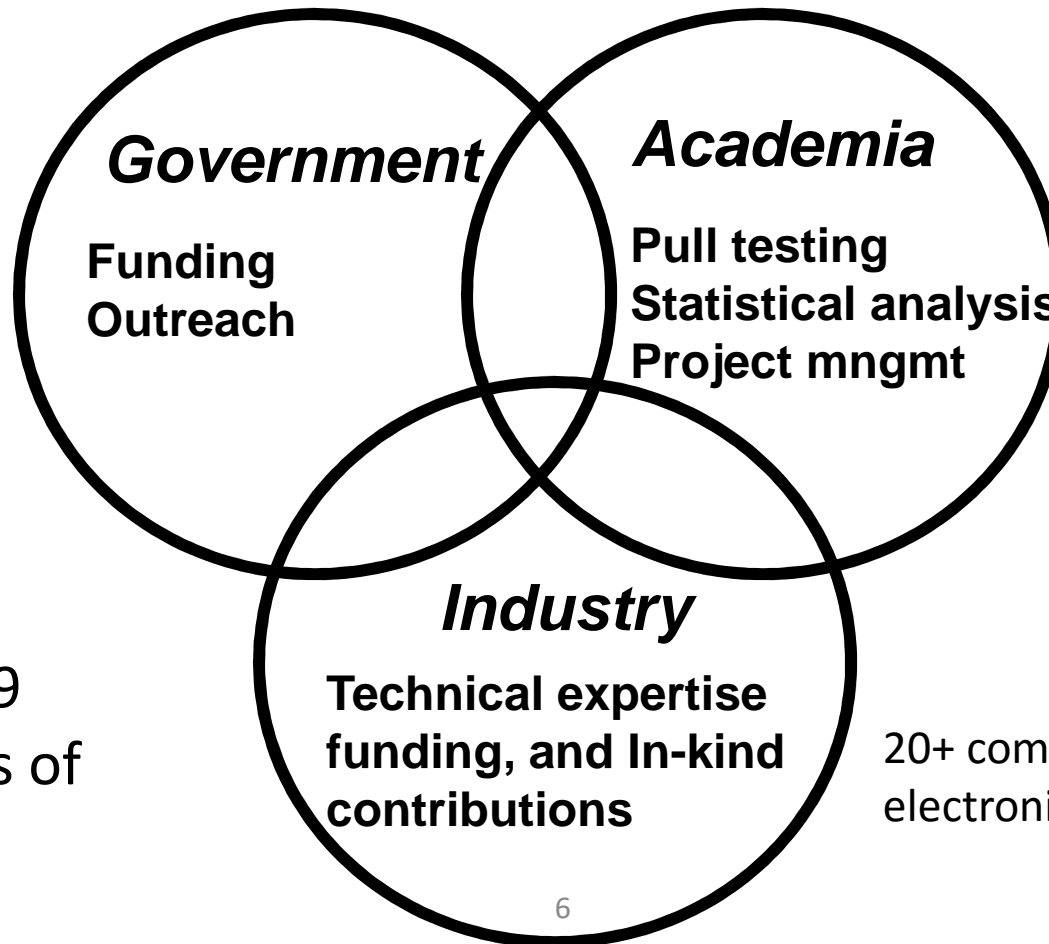
2012 – ongoing

[http://www.turi.org/Our\\_Work/Business/Industry\\_Sectors/Aerospace\\_Defense](http://www.turi.org/Our_Work/Business/Industry_Sectors/Aerospace_Defense)



# New England Lead-free Electronics Consortium

**\$1.5 million total in direct funding and in-kind contributions**



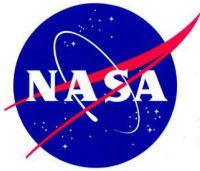
2001 – 2009  
Four Phases of  
Research

20+ companies in the  
electronics industry

# Hex Chrome Free Sealant Evaluation Team

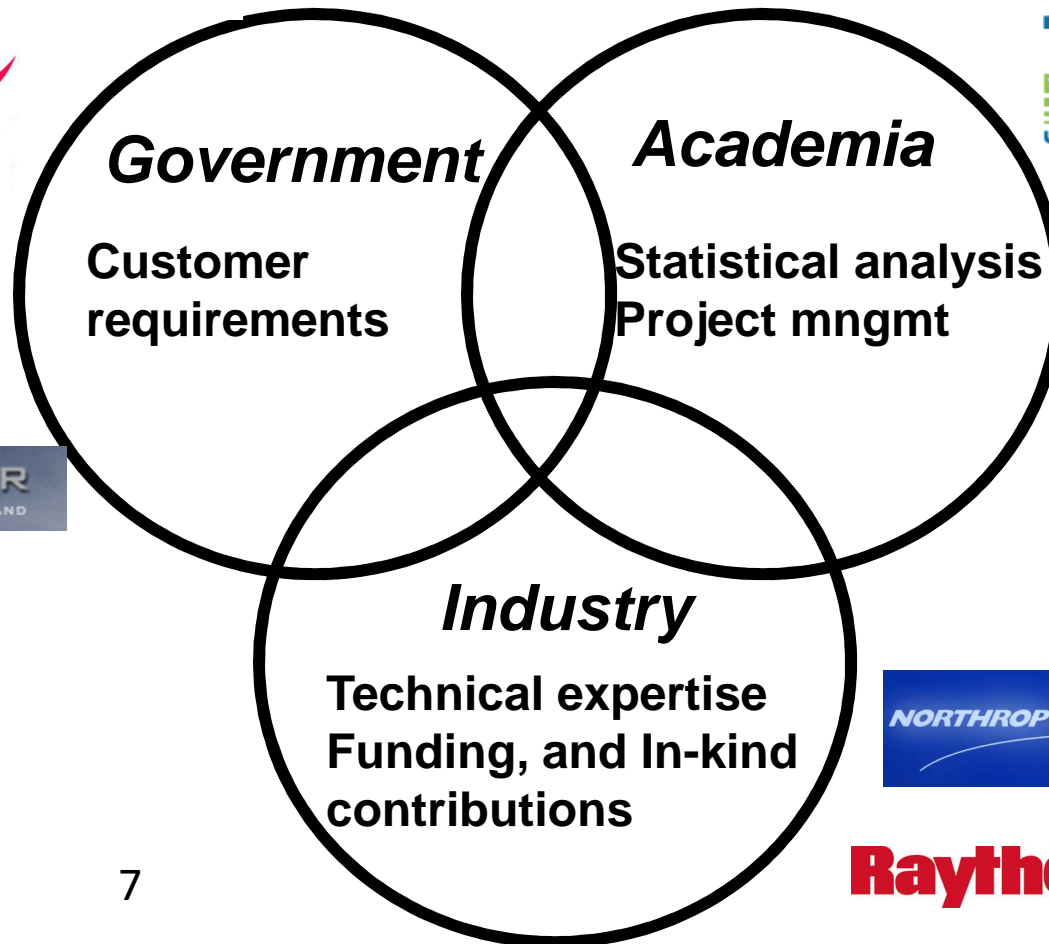


Aviation &  
Missile Command  
Safety Office



U.S. AIR FORCE

NAVY AIR  
NAVAL AIR SYSTEMS COMMAND



# Success factors

**TABLE 1. SUCCESS FACTORS FROM COLLABORATIVE SUPPLY CHAIN PROJECTS – THE MASSACHUSETTS TOXICS USE REDUCTION INSTITUTE EXPERIENCE**

1. Use of a toxic chemical(s) of concern is pervasive in an industry sector
2. Toxic chemical is not used for competitive advantage (in other words, no particular companies gains individually by employing a safer substitute)
3. Strong market and/or regulatory drivers to reduce the use of the toxic chemical
4. Significant research required to switch to the use of safer alternatives
5. Time and cost intensive for companies to individually conduct research
6. Independent third party available to manage and coordinate the effort
7. Voluntary participation by government, academic, and industry collaborators
8. Participants provide either in-kind contributions (production equipment, technical expertise, materials, supplies, testing, etc.) or direct funding
9. Intent of participants is to adopt the safer alternative solutions identified
10. All results made public so that other companies can adopt solutions identified

*Source:*

<http://www.turi.org/content/download/8335/140853/file/TURI%20Aerospace%20Defense%20Supply%20Chain-%20Morose.pdf>



# Another example: Green Chemistry and Commerce Council

- A cross-sectoral, full value chain business membership organization
- A convener of collaborations to advance green chemistry innovation & practice
- An advocate for government policy & funding that advances green chemistry R&D and innovation



**Mission:** To make green chemistry standard practice – **Mainstream** - in industry, for innovation, public health, and environmental protection

Started in 2005



# Over 100 Members, Including:

Johnson & Johnson

LEVI STRAUSS & CO.

BEHR



SC Johnson  
A FAMILY COMPANY

BASF  
The Chemical Company



bioamber

Beiersdorf



Chemours



AMYRIS

Unilever

STAPLES



TARGET

Walmart



CVS Health

DOW

L'ORÉAL

EASTMAN

Timberland



Steelcase

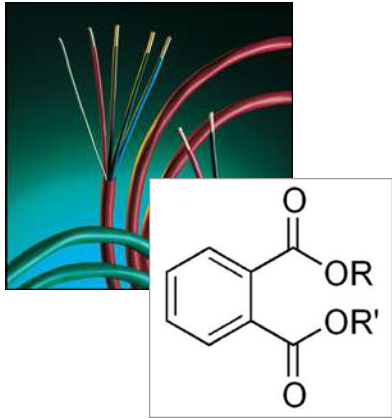


# GC3: Collaborative Innovation



- Select projects based on needs of member companies
- Facilitate pre-competitive collaborations
- Focus on bringing many different stakeholders to the table from across the value chain and across sectors
- Results made publicly available
- Support learning and networking

# Evaluation of Alternative Plasticizers for Wire and Cable



## Manufacturers

- Dell
- EMC
- HP

## Plasticizer Suppliers

- BASF
- Dow
- Hallstar

## Retailer

- Staples

## Project Goals:

- Identify safer alternatives to toxic phthalate plasticizers
- Pool knowledge, funds, and data to get more robust results
- Conduct detailed hazard assessments on 9 alternatives – proceeded with NDAs for 3 as formulations were confidential
- Create a model for future collaboration

# GC3 Collaborative, Open Innovation Competition: Preservatives for Personal Care & Home Care Products

**Target Audience:** Small companies, startups, universities, and individuals with promising ideas or technologies

**Judging:** Formulators + other stakeholders, performance testing and safety screening

**Awards:** Monetary + opportunities to partner with formulators and suppliers for evaluation, joint development, commercialization & scale



**In Partnership with:**



**Need Statement & Development Criteria for  
New Preservatives for  
Personal Care & Household Products**

# GC3 Open Innovation Competition: Preservatives for Personal Care & Home Care Products



## SPONSORS/ PARTICIPANTS



### CPG Companies

Babyganics

Beautycounter

Beiersdorf

Colgate-Palmolive

J&J

Method

P&G

RB (Reckitt Benckiser)

SC Johnson

Unilever/Seventh

Generation

### Retailers

Target

Walmart

### Preservative Suppliers

Dow

Lonza

Schuelke

Thor

### Other Organizations

Environmental Defense  
Fund (EDF)

State of Minnesota

# Summary

- Supply chain collaborations can take several forms based on the needs identified
  - In depth analysis of alternatives
  - Performance testing of existing options
  - R&D
- First step:
  - Gather based on a shared need
  - Use as a chance to share key principles about substitution – transitioning to safer chemicals and technologies
  - Develop trust around the table
  - Identify collective interest in next steps

# For more information

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