"Labor and Environmental Health Activists Build Alliances to Promote Green Chemistry"

Great Lakes Green Chemistry Network
Michigan Green Chemistry Clearinghouse
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Presenters:

ED COLLINS
International Representative
International Brotherhood of Electrical Workers (IBEW)
Executive Vice President-at-large, Massachusetts AFL-CIO

TOLLE GRAHAM
Labor and Environment Coordinator
Massachusetts Coalition for Occupational Health and Safety (MassCOSH),
USW local 9358
The Alliance for a Healthy Tomorrow (AHT) is a coalition of citizens, scientists, health professionals, workers, and educators seeking preventive action on toxic hazards.

**Goal:** to develop proactive policies to prevent harm before the damage is done, and to choose the safest alternatives.

www.healthytomorrow.org
Labor identified as key Stakeholder in AHT

• **Clean Water Action**, lead organizer of AHT, solicited Funders to support staff time of key groups: environmental, health-based, faith-based and **Labor**

• **MassCOSH** was able to focus significant time for outreach to and involvement of organized labor
Labor’s “tools” for safer alternatives to toxic chemicals in the workplace

– collective bargaining

– Access to information on hazards

– rights to independent analysis of technologies, processes, by worker representatives

– National/ International unions
Labor priorities become AHT priorities

• AHT Labor Advisory Committee formed (2002)

• Just Transition for Workers and Communities Statement

• AHT Campaign Endorsement Policy
Safer Alternatives Bill written/ filed (2003)

• Builds upon the Massachusetts Toxic Use Reduction Act program
• Labor seat on Advisory Committee to recommend priority chemicals.
• Technical assistance grants on the impact of the chemical substitution plan and independent technical support to assist them in analysis of other technologies, processes or work organization;
• Just Transition clause
Green Chemistry Awareness
Training For Workplace and Community
Environmental Public Health

Funding provided through the National Institute of Environmental Health Sciences (NIEHS), Partnerships for Environmental Public Health, Worker Education and Training Program.

Supplement through the American Recovery and Reinvestment Act (ARRA).
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Curriculum Goals

• 4-hour Green Chemistry training course for occupational and environmental health activists

• Advocate for making a transition to green chemistry and safer chemical alternatives

• Expand green chemistry awareness to a network of advocates/activists, primarily in Massachusetts and Connecticut
Curriculum Approach

• Small groups reading and responding to materials
  – Scope of the Problem & Plywood case study -- compare new toxics information with participant experiences

• Participatory activities that involved moving around:
  – Making Glue
  – “Gallery walk and posting” - Placing yourself on a map of chemical, labor, environmental landmark events
Use the Training for Campaigns

• Discussion and reporting of ways to engage in current campaigns or policy to promote “green chemistry/ safer alternatives to toxic chemicals and prevent generation of hazardous waste.
Learning Objectives – To Understand

• **Activity One.** Limitations of current approaches to toxic substances management and regulation.

• **Activity Two.** How current chemical product design leads to toxic hazards and waste
  – A green set of design principles can help prevent these problems

• **Activity Three.** Apply green chemistry principles to a work environment problem: plywood in building construction

• **Activity Four.** How green chemistry is consistent or differs from standard worker and environmental protection paradigms
  – Hierarchy of IH Controls - - Pollution Prevention

• **Activity Five.** How to use green chemistry principles in campaigns and efforts to reduce toxic contamination.
12 Green Chemistry Principles – In Action

Raw Materials and Feedstocks:
- Atom Economy (2)
- Renewable Feedstocks (7)

Processing Chemicals:
- Reduce hazardous processes (3)
- Energy Efficiency (6)
- Safer Solvents (5)
- Reduce Derivatives (8)
- Catalysis (9)
- Real-time Analysis (11)
- Accident Prevention (12)

The Product:
- Designing Safer Products (4)

End-of-Life:
- Recycle (1)
- Reuse (1)
- Regeneration (1)
- Compost/Biodegradable (10)
- Land Fill (Pollution)

Pollution to Avoid:
- By-products
- Unused reagents & raw materials
- Spent Solvent
- Wasted Energy

Pollution Prevention:
- Reduce by-product formation (2) (8)
- Use less/safer reagents and raw materials (3)
- Use less/safer solvents (5)
- Reduce Energy Use (6)
- More efficient processes (9)
Treatment: Only if necessary – burning or using biological and/or chemical methods

Storage and Disposal: Responsible storage / disposal of unavoidable waste – taking strong measures to prevent contamination

Eliminate Hazards
Substitute toxic and hazardous chemicals with safe or less toxic/hazardous chemicals; remove ignition sources, sharp edges, any sources of slips, trips, falls.

Engineering Controls
Use appropriate ventilation; mechanical devices to handle material and to minimize lifting; noise reduction; machine guarding; lock-out/tag-out mechanisms.

Administrative Controls
Setting up work zones; establish safe work practices, such as buddy system, proper communication and security; proper training; frequent information updates; use appropriate equipment; medical monitoring.

Personal Protective Equipment
Use appropriate respiratory protection, skin protection (gloves, suit, boots), hard hat, hearing protection.

Hierarchy for Preventing Pollution & Workplace Illnesses, Injuries, & Fatalities

Pollution Prevention- P2

Best H&S and P2

Eliminate or Reduce toxic substances and processes
Change the product; change the process; substitute non-toxic for toxic.

Reduce exposure to toxic substances by “control at the source”
Closed loop systems; isolation/total enclosure; process redesign.

Recycling: Processing waste for reuse

Least Effective for H&S and P2

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**Historical Events**

- 1900 - 1949: Great Depression
- 1950: Korean War
- 1960: Vietnam War
- 1970: IMF, World Bank Created
- 1980: World War II
- 1990: "Cold War" and Anti-Communism
- 2000: Increasing Globalization
- 2010: First Iraq War
- 2011: 9/11 and "War on Terrorism"

**Consequences of a Chemical Economy**

- First Case of Lung Disease Due to Asbestos
- Chemical Industry in Rapid Development with Little Government Attention
- Pesticide Markets Boom
- Leaded Gasoline in Use
- Computer Chip Invented
- Hole in the Ozone Layer
- Bhopal, India (Gas Leak)
- Deepwater Horizon Oil Spill
- Woburn, MA (Water Contamination)
- Times Beach, MO (Dioxin)
- Hurricane Katrina
- Libby, Montana (Asbestos)
- Love Canal, NY (Toxic Waste)

**Legal & Political Events**

- 1900 - 1949
- 1950
- 1960
- 1970
- 1980
- 1990
- 2000
- 2010

- Safe Drinking Water Act
- Clean Air Act
- OSHA
- Clean Water Act
- Toxic Substances Control Act
- HSWA (Hazardous Waste)
- NAFTA
- EPA Green Chemistry Program
- Pollution Prevention Act
- CAFTA
- Consumer Product Safety Act Amended
- EU Implements REACH
- US Green Chemistry Bill
- SARA: Right to Know & TRI Established
- Supreme Court Overturns "Fetal Protection" Ruling

*US Chemical Production 1945-2005*
Reflections From Timeline Activity

• Picking up dead fish in Lake Erie as a 5 year old
• Disability – time to think about activism
• Organizing campaigns in my union safety committee
• TCE contamination in the groundwater in my hometown when I was in high school
• I got sick at work
• My best friend died of leukemia
Modifications for Different Groups

- Janitors in Connecticut
  - Many had been involved in Green Cleaning Programs, had H&S backgrounds, and had awareness of toxic job exposures
- High School students (CT)
- Green Justice Coalition in Boston
- Green Decade
  - A suburban green group
- National Health and Safety Summit
How do you see yourself using the information you obtained in the training?

• “Advocating for this cause, and learning more about it”
• “Promote and get involved more in eliminating and finding alternatives to toxic chemicals”
• “Makes me more aware of going green”
• “Trying to recycle more so less material reaches a landfill”
• “To teach others and to improve any process I work with”
• “Taking the 12 principles and selecting home cleaning items”
• “Some of the examples will help me to explain Green Chemistry to other people”
• “Looking at green cleaners and educating members at the work site”
Green Chemistry Awareness Training For Workplace and Community Environmental Public Health

For access to the Green Chemistry Training Manuals and Posters, visit:

http://www.uml.edu/TNEC/

and click on the “green chemistry” tab on the left navigation bar