



**GC<sup>3</sup>** | Green Chemistry &  
Commerce Council



Lowell Center for Sustainable Production

One University Avenue, University of Massachusetts Lowell, Lowell, MA 01854



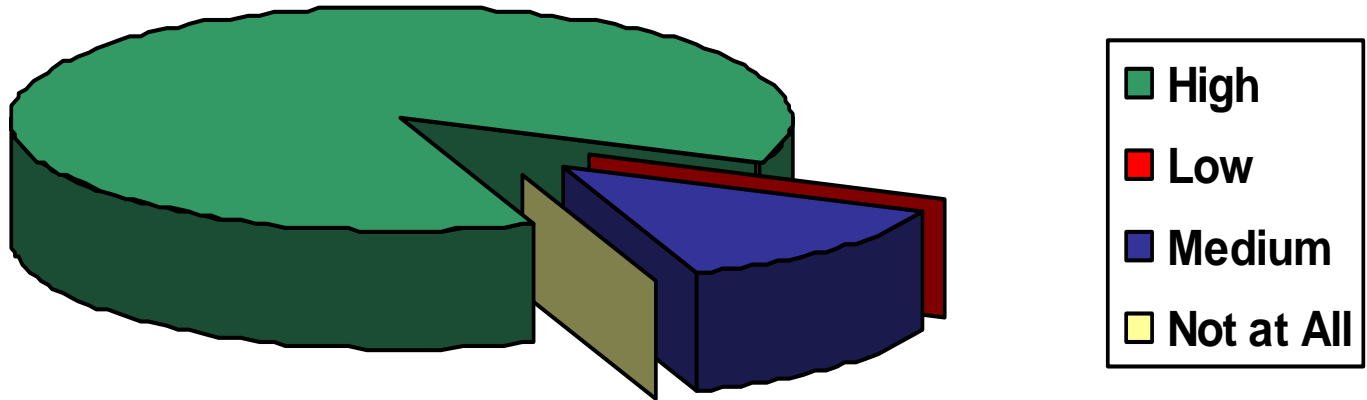
# Green Chemistry and Commerce Council – from Conceptualization to Formalization

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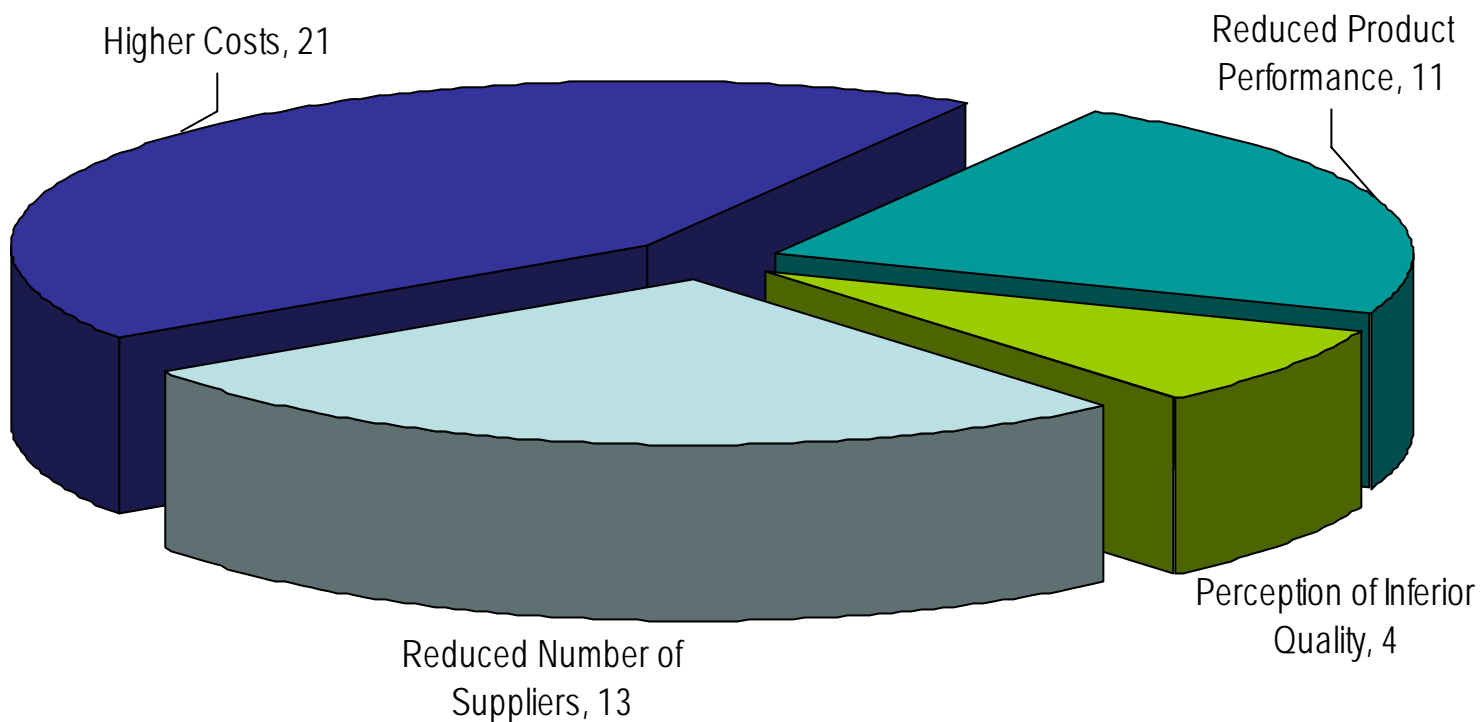
# Background – the November 2005 Darden Innovator's Roundtable

- *Innovators Roundtable on Sustainable Business and Safer Chemistry Through the Supply Chain* discussing barriers and opportunities in the application of Green Chemistry design principles and safer chemicals selection by the private sector, including:
  - 1) how they work within their companies, supply chains and with their customers to move away from suspect chemicals and toxicity, and expand the demand for safer chemicals;
  - 2) the potential impacts of European chemicals policies;
  - 3) tools for choosing safer chemicals and drivers of and barriers to innovation
  - 4) opportunities and needs created by new chemical policies (state and country) and other core market drivers.
- Representatives from 50 companies, academics, and government attendees

# Importance of green design to the firm



# Barriers to Green Chemistry and DfE innovations





# Common themes from Darden

- Green Chemistry and DfE are here to stay
- Innovation around green chemistry and safer alternatives are good for business
- Moving to safer alternatives is a continuum
- Companies can't be environmentally sustainable if they are not economically sustainable
- Change is happening due to a number of drivers
- Barriers still exist
- Partnership and collaboration – across firms, between firms and government, firms and NGOs are critical

# Lessons and Follow up to Darden

- Business to business dialogue across sectors is a fruitful way to advance DfE and green chemistry
- There are substantial needs/barriers to safer chemicals, materials and products that are similar across companies and that a group of companies with a similar dedication can fulfill together.
- Such a dialogue can be a powerful motivator for change.
- The Green Chemistry and Commerce Council (GC3) was formed by attendees participating in this *Innovators Roundtable* as a means to continue dialogue, information sharing, and collaboration around safer chemicals and products.



# Green Chemistry and Commerce Council (GC3) Mission

- To promote and support green chemistry and Design for Environment (DfE) research, practices and purchases nationally among states, federal agencies and other companies by:
- Implementing Green Chemistry, Green Engineering, and Design for Environment throughout supply chains and share strategies to overcome barriers;
- Promoting education and information on safer chemicals and products that can increase demand by broad range of consumers; and
- Identifying existing and needed information on toxics hazards, risks, exposures and safer alternatives to promote "Green Chemistry" as defined in the *12 Principles of Green Chemistry*.



# GC3 working structure

- Green Innovation Listserv
- Working groups (with GC3 member chairs) with more periodic conference calls and email discussions
- Periodic (quarterly) conference calls
- In-person meetings in conjunction with other conferences/meetings
- Informal networking structure at this point
- This is the second “big” meeting for the GC3
- Coordination by Lowell Center for Sustainable Production

# GC3 working groups

- *Advancing DfE and Green Chemistry*: focusing on activities to support the federal Design for Environment program and green chemistry legislative initiatives; addressing conflicts between DfE and eco-labeling systems; and integrating state green chemistry initiatives into their work.
- *Tools for Chemical Assessment and Safer Design*: identifying existing and needed tools, as well as tools in development, and considering creating a database of toxicity information for companies looking to make better chemical choices.
- *Drivers for Innovation and Marketing*: conducting a series of interviews to discover company drivers for innovation, and marketing philosophies. Looking into marketing opportunities for promoting green chemistry success stories, and consider addressing guidelines around green marketing so consumers know when they're buying a safer product.



# What have we accomplished since Darden?

- Increased membership
- Held numerous widely attended conference calls and discussions
- 3 working groups that have significant accomplishments (to be discussed)
- A mission and beginning strategy for expansion
- GC3 is now a “household” name
- Greater support for DfE and green chemistry

- The Green Chemistry and Commerce Council (G3)—a group of some 40 industry, academic, and NGO representatives convened through the Lowell Center for Sustainable Production (LCSP), in Lowell, MA—“supports DfE strongly,” and wrote [a Feb. 1, 2007](#), letter to EPA Administrator Stephen Johnson urging greater funding for the program, which has “a backlog of reviews” to process, says the S.C. Johnson source.




A background image showing a vast blue ocean under a bright blue sky with wispy white clouds. The sun is visible on the left side, creating a bright glow and reflecting on the water's surface.

What has changed and what is  
needed now?

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**FEATURE**

Chemicals Within Us  
OCTOBER 2006

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By David Ewing Duncan      Photographs by Peter Essick

Modern chemistry keeps insects from ravaging crops, lifts stains from carpets, and saves lives. But the ubiquity of chemicals is taking a toll. Many of the compounds absorbed by the body stay there for years—and fears about their health effects are growing.

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## A toxic life

We're polluted from head to toe and though scientists can now measure minute amounts of chemicals in our bodies, no one knows the long-term health effects

Apr. 21, 2006. 06:08 AM

NANCY J. WHITE

LIFE WRITER

Sarah Winterton is many things: a 45-year-old mother of three teenagers, a Toronto resident, a program director — and a toxic chemical dump.

Blood and urine samples show that her body is

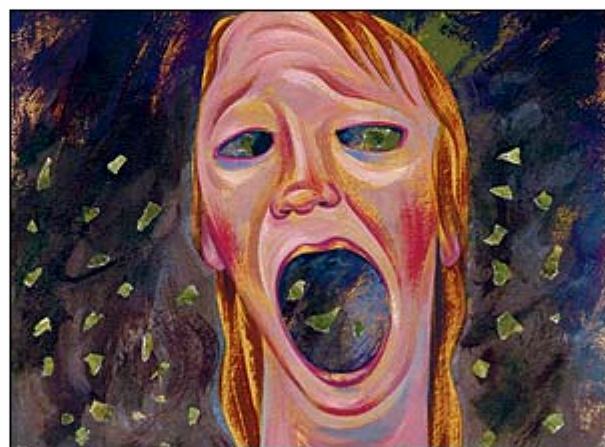


ILLUSTRATION BY RAFFI ANDERIAN/TORONTO STAR

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- [Graphic: Chemicals inside and outside the home \(pdf\)](#)
- [Graphic: Chemicals in the body: 3 people tested \(pdf\)](#)

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REACH

- Overview
- Preparations for REACH
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- Agency preparations
- Job opportunities
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REACH proposal

- Proposal
- Consultation
- Impact assessment
- Trial runs
- The White Paper

GHS - Globally Harmonised System of Classification and Labelling of Chemicals

- Implementation
- Stakeholder consultation

REACH



The new European Chemicals regulation (REACH) was adopted in December 2006. REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals. REACH Regulation (EC) No 1907/2006 and Directive 2006/121/EC amending Directive 67/548/EEC were published in the Official Journal on 30 December 2006.

REACH will enter into force on 1 June 2007. Enterprises which manufacture or import more than one tonne of a chemical substance per year will be required to register it in a central database administered by the new EU Chemicals Agency. The Agency will provide IT tools and guidance and Member States will offer helpdesk assistance to the impacted companies.

The New EU Chemicals Legislation - REACH

News highlights

Commission moves fast to cut administrative burdens for small businesses  
07/03/07

REACH Helpdesks: Help not hindrance  
15/02/07

Recruitment of staff for the new European Chemicals Agency (ECHA)  
14/02/07

Publication of a vacancy - Executive Director - European Chemicals Agency  
10/02/07  
*More REACH news...*

Grants and Tenders

IPR Awareness and Enforcement project  
(Deadline: 22/06/2007)  
*Further details and more REACH grants and tenders...*





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**AN ORDER PROMOTING SAFER CHEMICALS IN CONSUMER  
PRODUCTS AND SERVICES**

**WHEREAS**, Maine is dedicated to the mutually dependent goals of economic development, public health promotion and environmental protection; and

**WHEREAS**, further development of safer alternatives to hazardous chemicals in Maine has the potential to spur business growth, create jobs, improve public health, lower the costs of health care and special education, and protect the environment; and

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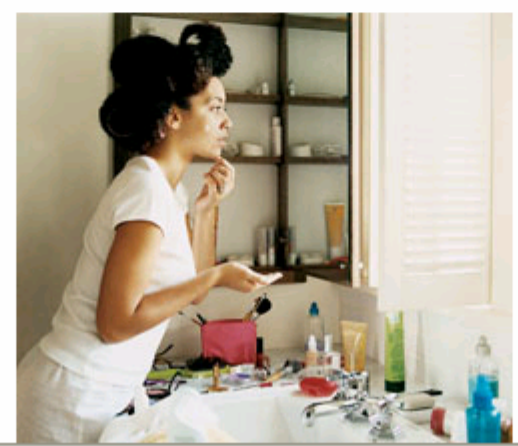
# Keeping Well-Preserved

## Cosmetic preservatives makers offer alternatives as widely used parabens come under scrutiny

[Marc S. Reisch](#)

Cosmetics ingredients must be above suspicion. As with Julius Caesar and his wife, even the hint of scandal is enough to precipitate a divorce—be it between man and woman or between cosmetics maker and suspect ingredient.

Cosmetics formulators have used esters of *p*-hydroxybenzoic acid as preservatives for more than 20 years. They are reliable and cost-effective, and most regulatory agencies and oversight bodies have approved their use. The tiniest amount of these preservatives keeps skin creams, shampoos, conditioners, and



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Wal-Mart to Use Preferred Substances in Chemical Intensive Products

Source: GreenBiz.com

BENTONVILLE, Ark., Oct. 31, 2006 - Wal-Mart Stores says it plans to begin implementing its "Preferred Chemical Principles" to establish a clear set of preferred chemical characteristics for product ingredients.

The purpose is to drive the development of more sustainable products for "mother, child, and the environment," according to the company. The first three of these priority chemicals are being announced at the Molecule-to-Molecule meeting, a two-day event hosted by the Chemical Intensive Product Network (CIP), a group designed to engage suppliers, NGO's, government, academics and other subject matter experts on issues and opportunities around product sustainability.

"One of our environmental goals at Wal-Mart is to sell products that sustain our resources and our environment," said John Westling, senior vice president and general merchandise manager, Merchandise Division, Wal-Mart Stores, Inc. "We are

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# 'Green chemistry' pays off

Updated 6/25/2006 7:12 PM ET

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Enlarge By Rob Hill, UM-Columbia

Galen Suppes, a professor of chemical engineering at the University of Missouri-Columbia, has won a Presidential Green Chemistry Challenge award.

By Elizabeth Weise, USA TODAY

There's a globby problem mucking up the nation's search for alternative energy sources.

When farmers take soybeans or corn and turn them into biodiesel, they end up with a whole lot of glycerin, a colorless, viscous, slick liquid that's the primary ingredient in clear soaps.

The Environmental Protection Agency estimates that when U.S. biodiesel production hits its stride, it will make about 1 billion more pounds of the glycerine than the market needs per year.

Enter Galen Suppes, a professor of chemical engineering at the University of Missouri-Columbia. Suppes and his team have developed an efficient way to turn that unwanted byproduct into a cheap, non-toxic substitute for antifreeze.

Which is why on Monday Suppes is being honored with a coveted Presidential Green Chemistry Challenge award in Washington, D.C., according to officials at the EPA and the American Chemical Society. The recipients, whose work prevents pollution through better chemical design, are chosen yearly by a panel of distinguished chemists. The program, administered by the EPA, is awarded by the president.

Suppes created a process that fulfills numerous green chemistry goals. It takes something that would be a waste product and makes it useful. It finds a way to replace

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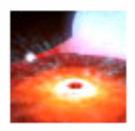
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- **Home Depot to Display an Environmental Label**
- April 17, 2007, Tuesday
- By MICHAEL BARBARO (NYT); Business/Financial Desk
- Late Edition - Final, Section C, Page 1, Column 4, 995 words
- **DISPLAYING ABSTRACT** - Home Depot will introduce label for 3,000 of its products that promote energy conservation; expects to include 6,000 products by 2,009, making it largest green labeling program in American retail; customers have been slow to purchase environmentally sustainable products due to higher prices and poor performance compared to those they are meant to replace

# Challenges for the future

- Ensuring adequate resourcing of government programs supporting DfE and green chemistry
- Distinguishing safer products and preferable treatment
- Ensuring tools and support so that companies can move towards safer materials.
- Ensuring good communication up and down supply chains to move in the right direction
- Education of consumers, purchasers, and manufacturers about safer options



# The agenda

- Thurs
  - Workgroup presentations and discussion
  - Discussion on retail and benefits/impacts
  - Site visits to UMASS Lowell and MA/COM
  - Panel on implications of REACH for safer chemicals
  - Reception and Dinner

# The Agenda

- Friday
  - Working groups
  - Report backs/next steps for groups
  - Next steps for the GC3
    - Formalization and improved coordination
    - Expanding the network – more along supply chains from chemical production to retail
    - Strategizing on how the GC3 can collectively influence practice towards safer chemicals and products: consumers, government, industry