Green Chemistry and Commerce Council (GC3): A Year in Perspective

Joel A. Tickner, ScD, Yve Torrie, MS
Lowell Center for Sustainable Production
University of Massachusetts Lowell
Chemicals, alone or in combination, are the platform upon which key elements of the global economy have been built, and have been incorporated into millions of products used every day. Many chemicals may have inherently harmful characteristics that can impact ecological and human systems as they are used throughout supply chains.

A growing number of companies are discovering that the approaches of green chemistry and Design for Environment (DfE) allow for a transition to safer alternatives. The Green Chemistry and Commerce Council provides open conversation about the challenges to and opportunities for this successful transition.
GC3 Highlights

- Publication of “An Analysis of Corporate Restricted Substance Lists and Their Implications for Green Chemistry and Design for Environment.”
- Development of GC3 Business Plan and Advisory Committee Elections.
- Research on supply chain information flows for publication.
- Presence at the RILA Conference and engagement with retailers.
- Research on product chemicals management in the retail industry for publication.
- Development of a “green glossary.”
- Significant progress in discussions towards a formulators DfE “standard.”
- Increased recognition of GC3 as a powerful network of leading firms dedicated to advancing safer chemicals and products.
A Resource Guide for States and Higher Education

2009

Growing the Green Economy Through Green Chemistry and Design for the Environment

“In a few decades it won’t be special anymore...Everyone will be doing green chemistry.”
Professor Robert H. Crabtree
Yale University
Chemistry Department
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GC3 Advisory Committee

- Melissa Coffin, Lowell Center for Sustainable Production
- Richard Cottrell, Sysco
- Berkeley Cue, Pfizer (retired)
- John Frazier, Nike
- Lauren Heine, Lauren Heine LLC
- Bob Israel, Johnson Diversey
- Rich Liroff, Investor Environmental Health Network
- Dave Long, Environmental Sustainability Solutions
- Roger McFadden, Corporate Express
- Joel Tickner, Lowell Center for Sustainable Production
- Yve Torrie, Lowell Center for Sustainable Production
GC3 Working Groups

- **Advancing Design for Environment (DfE) and Green Chemistry**
  Focusing on transparency of the federal Design for Environment program; advancing green chemistry legislative initiatives; advancing state green chemistry initiatives.

- **Tools for Chemical Assessment and Safer Design**
  Exploring lessons of how companies share information up and down supply chains and how they apply that information towards safer design; exploring creation of a “minimum data set” of information needed to make better chemical choices.

- **Drivers for Innovation and Marketing**
  Exploring the role of the retail sector in advancing safer products and how to effectively engage this sector.
Progress in Working Groups

- Tools – RSL database and report, initial case studies discussions on chemical assessment, prioritization and management schemes.
- DfE/Green Chemistry – meeting with EPA officials, Meetings with National Pollution Prevention Roundtable.
- Drivers – Discussions around “green” terminology and preliminary survey of retailer product chemicals management systems.
What’s new in the past year

- Change in tone and tenor in Washington and beyond.
- Growth of and excitement about Green Jobs and the Green Economy.
- Economic Crisis.
- Increased acknowledgement of limits of TSCA and need for reform. Still disjointed approach to policy.
- More and more policy development at state level and collaboration between states.
- Companies preparing for REACH and its implications for supply chains. First Authorization list.
- Increased consumer concern about toxic substances in products.
- Increased retailer and chemical user engagement in demanding greater information and safety through supply chains.
New Era of Hope, Positivity and Collaboration – Younger Generation Engagement

- [http://oneminuteshift.com/videos/its_not_too_late](http://oneminuteshift.com/videos/its_not_too_late)
- [http://www.youtube.com/watch?v=kA_DZsDRvyA&feature=PlayList&p=CF1EB44A578E5B1F&playnext=1&playnext_from=PL&index=2](http://www.youtube.com/watch?v=kA_DZsDRvyA&feature=PlayList&p=CF1EB44A578E5B1F&playnext=1&playnext_from=PL&index=2)
'Green jobs' at heart of Obama's Earth Day push on energy

By ALEX KAPLUN, Greenwire
Published: April 22, 2009

The Obama administration is using Earth Day for launching another all-out effort to sell the American public and key lawmakers on "green jobs" as the solution for the United States' environmental and economic woes.

The jobs push starts at a critical time for the administration's new program. The House Energy and...
One Hundred Tenth Congress
of the
United States of America

AT THE SECOND SESSION
Begun and held at the City of Washington on Thursday,
the third day of January, two thousand and eight

An Act

To establish consumer product safety standards and other safety requirements
for children's products and to reauthorize and modernize the Consumer Product
Safety Commission.

Be it enacted by the Senate and House of Representatives of
the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.
(a) Short Title.—This Act may be cited as the "Consumer
Product Safety Improvement Act of 2008".
(b) Table of Contents.—The table of contents for this Act
is as follows:

Sec. 1. Short title; table of contents.
Sec. 2. References.
Sec. 3. Authority to issue implementing regulations.

TITLE I—CHILDREN'S PRODUCT SAFETY
Sec. 101. Children's products containing lead; lead paint rule.
Sec. 102. Mandatory third party testing for certain children's products.
Sec. 103. Tracking labels for children's products.
Sec. 104. Standards and consumer registration of durable nursery products.
Sec. 105. Labeling requirement for advertising toys and games.
Sec. 106. Mandatory toy safety standards.
Sec. 107. Study of preventable injuries and deaths in minority children related to
consumer products.
Sec. 108. Prohibition on sale of certain products containing specified phthalates.

TITLE II—CONSUMER PRODUCT SAFETY COMMISSION REFORM

Subtitle A—Administrative Improvements
Sec. 201. Reauthorization of the Commission.
Sec. 202. Full Commission requirement; interim quorum; personnel.
Sec. 203. Submission of copy of certain documents to Congress.
Sec. 204. Expedited rulemaking.
Sec. 205. Inspector general audits and reports.
Sec. 206. Industry-sponsored travel ban.
Sec. 207. Sharing of information with Federal, State, local, and foreign government
agencies.
Sec. 208. Employee training exchanges.
Sec. 209. Annual reporting requirement.

Subtitle B—Enhanced Enforcement Authority
Sec. 211. Public disclosure of information.
Sec. 213. Prohibition on stockpiling under other Commission-enforced statutes.
Sec. 214. Enhanced recall authority and corrective action plans.
Sec. 215. Inspection of firewalled conformity assessment bodies; identification of
supply chain.
Sec. 216. Prohibited acts.
Sec. 217. Penalties.
Sec. 218. Enforcement by State attorneys general.
Sec. 219. Whistleblower protections.
Congress Considers Reform of U.S. Chemicals Control Law

Print this page

By J.R. Pegg

WASHINGTON, DC, February 26, 2009 (ENS) - The U.S. chemical regulatory system is failing to protect public health and the environment and is in dire need of reform, experts told a House panel Thursday. The legal hurdles of existing law make it virtually impossible for the federal government to limit or ban the use of toxic chemicals or to even obtain the information needed to devise effective regulations, several witnesses testified before a House Energy and Commerce subcommittee.

The hearing focused on the effectiveness of the Toxic Substances Control Act. Enacted in 1976, the statute gave the U.S. Environmental Protection Agency the authority to regulate chemicals.

But the agency has only required testing for some 200 of the more than 82,000 chemicals in commerce and has issued regulations to control only five existing chemicals.
Statement

For Immediate Release
Contact: Tiffany Harrington (703) 741-5583
Email: tiffany_harrington@americanchemistry.com

ACC CALLS FOR NEXT GENERATION OF CHEMICAL REGULATION
System Must Reflect Advances in Science and Technology, Boost Public Confidence

ARLINGTON, VA (February 26, 2009) – The American Chemistry Council (ACC) today called for the improvement and modernization of the U.S. chemical regulatory system and pledged to take a leadership role in this critical initiative. ACC is calling for a series of forward-looking measures that would increase industry’s responsibility for evaluating chemicals and their uses, authorize the Environmental Protection Agency (EPA) to make safety determinations about priority chemicals in a risk- and science-based process and assure an appropriate level of resources for EPA to implement these actions.

“We need a regulatory system that addresses government and public concerns about chemicals, enhances the competitiveness and innovation of our industry and reflects scientific and technological innovations,” said Cal Dooley, President and CEO of the American Chemistry Council. “We are launching a robust effort to grant new powers and adequate resources for the U.S. Environmental Protection Agency (EPA) to more effectively fulfill its mission in determining the safety of chemicals for their intended uses.”

“The fundamental federal chemical management statute—the Toxic Substances Control Act (TSCA)—was enacted more than 30 years ago. Scientific knowledge about chemicals has advanced significantly since then, along with federal and industry initiatives to improve public health and safety,” Dooley continued. “It is necessary and appropriate that we move beyond outdated frameworks to ones that are science-based.”

ACC offers these recommendations to the Administration and Congress:

- Ensure the EPA has the authority to prioritize chemicals that pose a threat to safety and the environment and designate them for review.
- Ensure the EPA has the resources to assess and regulate identified chemicals.
- Repeal the current “eggshell” provision in TSCA, which hinders the EPA’s ability to appropriately manage the risks posed by a chemical.
- Maintain an effective TSCA premanufacture notice system.
- Improve the TSCA阖 monitoring program.”
SAFER CHEMICALS
Guiding Principles for Chemicals Policy

Given the debates and discussions on how to implement green chemistry, the Working Group recognized the need to develop a set of principles that would outline the path to greener and safer chemicals. The joint development of these principles helps businesses in shaping their chemical policies and NGOs in understanding the challenges and critical steps to green chemistry implementation.

Endorsement List
To endorse the Principles, click here

Guiding Principles for Chemicals Policy by the Business-NGO Working Group
Creating Healthy Solutions for the Environment, People and the Economy

Demand for products made from greener chemicals is growing rapidly. Consumers, investors and governments want chemicals that have low to no toxicity and degrade into innocuous substances in the environment. Leading businesses are seeking to capture these emerging market opportunities by redesigning their products and catalyzing change in their supply chains.

To advance an economy where the production and use of chemicals are healthy for humans, as well as for our global environment and its non-human inhabitants, responsible companies and their supply chains should adopt and implement the following four guiding principles for chemicals policy:

1. Know and disclose product chemistry. Manufacturers will identify the substances associated with and used in a product across its lifecycle and will increase as appropriate the transparency of the chemical constituents in their products, including the public disclosure of chemicals of high concern. Buyers will request product chemistry data from their suppliers.

2. Assess and avoid hazards. Manufacturers will determine the hazard characteristics of chemical constituents and formulations in their products, use chemicals with inherently low hazard potential, prioritize chemicals of high concern for elimination, minimize exposure when hazards cannot be prevented, and redesign products and processes to avoid the use and/or generation of hazardous chemicals. Buyers will work with their suppliers to achieve this principle.

3. Commit to continuous improvement. Establish corporate governance structures, policies and practices that create a framework for the regular review of product and process chemistry, and that promote the use of chemicals, processes, and products with inherently lower hazard potential.

4. Support public policies and industry standards that: advance the implementation of the above three principles, ensure that comprehensive hazard data are available for chemicals on the market, take action to eliminate or reduce known hazards and promote a greener economy, including support for green chemistry research and education.
California Department of Toxic Substances Control

Welcome

New! California Green Chemistry Wiki
Participate in the Green Chemistry Wiki! This innovative tool was created to spur informal collaboration on the Safer Alternatives Regulations development process. News Release
The Green Chemistry rule development process will detail how DTSC implements Assembly Bill 1879 and Senate Bill 609.

News on California's Green Chemistry Initiative
Find recent news and videos on California's Green Chemistry Initiative. Find out what others are saying about Green Chemistry.

Green Ribbon Science Panel
Now! Green Ribbon Science Panel Agenda released View the public notice on the Green Ribbon Science Panel meeting. View the latest (April 27, 2009) background information and staff presentations/additional documents provided to the panel members. Read about California's new Green Ribbon Science Panel or view the news release on the panel members.
## US State Level Chemicals Policy Initiative

The database can be searched by state, region, status (e.g., enacted, proposed, and failed), policy category (e.g., pollution prevention, single chemical restriction, etc.), chemical, and product type (e.g., children's products, cleaning products, etc.).

To search the database, use the six pull-down menus below to make selections in one or more of the pull-down menus. When making selections in multiple pull-down menus, the results will include only entries that contain all of the selections highlighted. The database can also be searched by making multiple selections from one pull-down menu. In order to select more than one item in each menu, hold down the command key (Mac) or control key (PC) while making the selections. When making multiple selections in one pull-down menu, the results will include entries that contain any of the selections highlighted.

Additionally, the entire database can be searched by entering a bill number, word, or phrase into the box located below the pull-down menus. This will search the full database entries of each policy for the entered word or phrase, although it will not return results where the entered word or phrase is found solely in the full-text document (word or pdf) of the policy.

To print the results of the search, click on the print icon located at the top of the returned results. To search again, click on “new search” located below each entry to reset the menus.

To let us know about legislation or policies that are not represented in the database, any mistakes in the entries, or if you have any other comments, please click here.

### Passed and Pending State Level Chemicals Legislation

To select more than one item in each list, hold down the command key (Mac) or control key (PC) while making your selections.

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European Chemicals Agency (ECHA)

The Agency, located in Helsinki, Finland will manage the registration, evaluation, authorisation and restriction processes for chemical substances to ensure consistency across the European Union. These REACH processes are designed to provide additional information on chemicals, to ensure their safe use, and to ensure competitiveness of the European industry.

In its decision-making the Agency will take the best available scientific and technical data and socio-economic information into account. It will also provide information on chemicals and technical and scientific advice. By assessing and approving testing proposals, the Agency will minimize animal testing.

During the first 12 months the Agency is building up its organisation and recruiting personnel to be ready to accept registrations from 1 June 2008.

More

How to discover the ECHA website

The ECHA website is a single point of entry for all information on REACH. It provides access to technical guidance, frequently asked questions (FAQs), software tools and helpdesks. Here you will also find the latest updates on guidance, tools, data on chemicals and the Regulation.

More
The New Regulators

Retailers and States Take the Lead

The U.S. chemical industry has seen a new trend emerge on the regulatory front in recent years—the environmental initiatives of “big box” retailers and other downstream customers have become de facto regulatory requirements.

This is a shift from the aggressive federal rules of the 1980s and 1990s that were the industry’s primary concern. Instead, retailers as well as individual states appear to be shaping environmental policy.

Federal officials have issued relatively few regulations in recent years. One example is the 1976 Toxic Substance Control Act (TSCA), which provides EPA with authority to ban hazardous substances. EPA has used the law to ban only five compounds since TSCA’s creation, however.

Most of the significant environmental rules in the last 10 years have come from states, a trend that sometimes requires industry to comply with a maze of overlapping rules. The industry has also had to manage a long list of retailer demands, including calls for more sustainable packaging and the elimination of certain chemicals from finished products.

Wal-Mart (Bentonville, AR), one of the U.S. industry’s most powerful customers, surprised industry executives in 2006 when it announced that it would ban three substances: proposur and permethrin, both used in household insect-control products; and nonylphenol ethoxylates (NPE), an ingredient in some cleaning products. Wal-Mart has not said when it will fully phase out those products, however. “Wal-Mart has worked with its suppliers and developed a timeline for elimination of these three chemicals of concern from our products and to replace them with less harmful alternatives,” the company says.

Wal-Mart had also planned to announce restrictions on 17 other substances used in “chemical-intensive” products by the end of 2008, but that may take longer than anticipated, the company says. Wal-Mart is in the process of developing a screening tool to help it assess and prioritize product restrictions. “The process to prioritize the list of harmful chemicals is labor-intensive and robust,

26 Chemical Week, April 14/21, 2008
GS1 GDSN® is the GS1 Global Data Synchronisation Network

The GDSN is built around the GS1 Global Registry®, GDSN-certified data pools, the GS1 Data Quality Framework and GS1 Global Product Classification, which when combined provide a powerful environment for secure and continuous synchronisation of accurate data.

With GDSN, trading partners always have the latest information in their systems, and any changes made to one company’s database are automatically and immediately provided to all of the other companies who do business with them.

When a supplier and a customer know they are looking at the same accurate and up-to-date data, it is smoother, quicker and less expensive for them to do business together. The GDSN provides a single point of truth for product information.

Learn more here about Data Synchronisation (GDSN), Data Quality (DQF) and Product Classification (GPC).
Household Products Start to Come Clean on Ingredients

By ANJALI ATHAVALEY

You can read a label to find out what’s in your food. And a quick look inside a collar or hem tells you what your clothes are made of. Now, the same is happening with the stuff you use to clean your kitchen and bathroom.

A few manufacturers of household cleaning products have begun disclosing the chemicals in some of their products. S.C. Johnson & Son Inc. last month rolled out Web site What’sInsideSCJohnson.com to describe most of the ingredients for its Windex, Glade, and Shout brands. Clorox Co. lists ingredients for its Formula 409 and other products at ClickHere.com.
Green-wash (green‘wash’, -wosh‘) – verb: the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service.
Guide to Green Cleaning Products

Products are an integral part of any green cleaning program, just as is the process of cleaning green. As the green cleaning movement has matured, consensus has developed around certain definitions of cleaning products that have a preferred environmental and safety and health profile.

The sections below reflect the current state of the marketplace in defining green cleaning products and are largely based on the Illinois Guidelines and Specifications for the Green Cleaning Schools Act, the 2006 edition of the USGBC LEED-EB standard, and other publicly available documents.

Cleaning Product Formulations

Janitorial Paper Products

Powered Cleaning Equipment

Other Cleaning Products

Cleaning Product Formulations

For the high-volume cleaning product categories (i.e., bathroom cleaners; carpet cleaners; general-purpose and hard-floor surface cleaners; glass, window, and mirror cleaners; and hand soaps), the trend in the marketplace is to qualify these products as green if they...
Restricted Substances List (RSL)

February 2008
Release 2

To download a copy of the RSL Introduction 2007 Final Release 2, please click HERE.
To download a copy of the AAFA RSL Final Release 2, please click HERE.
To receive updated information, including future RSL releases, please click HERE.
To download a list of AAFA member companies who test for restricted substances on the RSL, please click HERE.

Introduction

This Restricted Substances List (RSL) was created by a special working group of the American Apparel & Footwear Association’s (AAFA) Environmental Task Force. The RSL is intended to provide apparel and footwear companies with information related to regulations and laws that restrict or ban certain chemicals and substances in finished home textile, apparel, and footwear products around the world.

It is our hope that this RSL will serve as a practical tool to help those individuals in textile, apparel and footwear companies, and their suppliers, responsible for environmental compliance throughout the supply chain, to become more aware of various national regulations governing the amount of substances that are permitted in finished home textile, apparel, and footwear products.

Our effort is to create a dynamic and useful instrument. The RSL will be updated on a regular basis and will be supplemented with additional resources to help officials in these companies undertake responsible chemical management practices in the aforementioned finished products.
Why an Economic Crisis Could Be the Right Time for Companies to Engage in 'Disruptive Innovation'

Published: November 12, 2008 in Knowledge@Wharton

While globalization has witnessed the decline of U.S. dominance in manufacturing, energy and even finance, one thing had long been presumed unassailable: Good old American ingenuity.

Now it appears that's not safe, either. China, whose industries have been envied in the West more for their tenacity than their ingenuity, has established a multi-year framework to become more innovative and, therefore, competitive. So has Singapore. Finland is merging its top business school, design school and technology school to create a multi-disciplinary "university of innovation" next year.

Council members of the National Academy of Sciences and the National Academy of Engineering have "expressed concern that a weakening of science and technology in the United States would inevitably degrade its social and economic conditions and in particular erode the ability of its citizens to compete for high-quality jobs," according to a 600-page report from the National Academies published in 2007 and titled, "Rising Above the Gathering Storm."

The wildcard these days is what will happen to innovation -- the advance of progressive ideas in science, technology and business -- now that the world economy is in a tailspin. The conventional wisdom might suggest that business, government and academia will be less willing to embrace the risk-taking and short-term costs that come with the territory of innovating.

Yet Paul J.H. Schoemaker, research director for the Mack Center for Technological Innovation, suggests that, for some companies, the economic crisis can actually provide an innovation platform. "The crisis has multiple impacts," Schoemaker says. "Loss of revenue and profit will at first instill a cost cutting mentality, which is not good for innovation. But if the patient is bleeding you need to stop that first. Then, however, a phase starts where leaders ask which parts of their business model are weak (and perhaps unsustainable) and that, in turn, can lead to restructuring and reinvention."

He also cautions against too much caution -- over-reliance on incremental innovation versus transformative, or "disruptive," innovation. In innovation circles, the two have come to be differentiated as "little i" and "Big I" innovation. "The largest gains in business come from more daring innovations that challenge the paradigm and the organization," Schoemaker says.
Challenges for the future

- Ensuring that DfE/Green Chemistry remain priorities in the new era of Green Jobs, and that programs are adequately resourced.
- Ensuring new policy developments support innovation in DfE and Green Chemistry.
- Ensuring adequate information and tools are available to ensure companies can make informed decisions in moving towards safer materials.
- Ensuring good communication and dialog up and down supply chains to move in the right direction. Engaging retailers and trade organizations more effectively in this.
- Education of purchasers and manufacturers about safer options.
Programmatic questions as we move forward

- How do we identify key focal areas where the GC3 can provide much needed input and direction, define deliverable work products, and how they best advance the mission of the GC3 and its participants?

- What projects will best engage participants actively in providing concrete impacts in practice and policy?

- Which projects can provide the best value added for the GC3 and its participants?
Strategic Directions - Projects

- Develop a set of options for retailers to develop product chemicals management systems, including a strategy for the GC3 to educate consumers around green chemistry and design for environment practices.
- Work toward passage of the federal Green Chemistry Research and Development Act in the current Congress (and ensure green chemistry is an important part of stimulus package funding).
- Ensure green chemistry and DfE are high priority areas in toxics at EPA (and other agencies) through development of a roadmap for the Administration on advancing DfE and green chemistry.
- Develop a roadmap for green chemistry/DfE application in the context of REACH implication.
- Enshrine the alternatives assessment/GC/DfE approach through an NAS report.
Strategic Directions - Organizational

- Attain media recognition for the GC3 through at least one major article.
- Expand the GC3 by at least 20 participants from key sectors.
- Secure adequate funding to ensure more hands on coordination while identifying at least 2-3 participant “leaders”.
Organizational Questions as We Move Forward

- How to expand the network – more participants along supply chains from chemical production to retail.
- How to ensure active participation to build energy and interest in the GC3 and “ownership” over the network and projects.
- How to ensure adequate resources for coordination, administration and research/outreach.
- How to link more effectively to other efforts to avoid duplication.
- How to increase media, industry, and government attention to GC3 and its vision and activities and with it the GC3’s impact.
Overall Meeting Objective

- Share information, experience and understandings among a diverse group of companies and other stakeholders on advancing implementation of green chemistry and design for environment (DfE).
Agenda – Monday afternoon

- 12:00-1:30 pm  Registration and Lunch
- 1:30-2:30 pm  Welcome and Introductions
- 2:30-3:15 pm  Overview of Working Group Activities in 2008
  - Advancing Design for Environment and Green Chemistry
  - Drivers for Innovation and Marketing Safer Products
  - Tools for Chemical Assessment and Safer Design
- 3:15-4:15 pm  Discussion of Future GC3 Strategy
- 4:15-4:30 pm  Break
- 4:30-6:00 pm  New Politics: Chemicals Policy in the Obama Administration
  - Richard Denison
  - Cheryl Hogue
  - David Bennett
  - Objective: How will chemicals policy change under the new administration and how can the GC3 provide input into this?
- 6:00-7:00 pm  Tour of Staples’ Green Building
Tuesday morning

- **7:15-8:30 am** Breakfast and Discussion of DfE Efforts
  - Clive Davies

- **8:30-10:15 am** Dialogs Up and Down the Supply Chain
  - Roger McFadden
  - Ann Wallin
  - Janet Mostowy
  - Mary Ellen Mika
  - Drummond Lawson

  **Objective:** What is the role of supply chains and dialog across them in advancing safer products, green chemistry and DfE?

- **10:15-10:30 am** Break

- **10:30-12:00 am** Trade Groups as Leaders in Advancing Green Chemistry and Design for Environment
  - Bill Balek
  - Stephen Lamar
  - Christopher Cleet

  **Objective:** What is the role of industry trade groups in advancing DfE and green chemistry?

- **12:00-1:00 pm** Lunch
Tuesday afternoon

- **1:00-2:30 pm**  Product Chemicals Management: Best Practices in Retail
  
  Objective: How can retailers provide leadership in advancing green chemistry and DfE?

  - **Jody Villecco**
  - **Sarah Beatty**
  - **John Leyenberger**

- **2:30-4:30 pm**  Working Group Breakout Sessions
  
  Objective: Advance discussion and work products of GC3 working groups: Tools for Chemical Assessment, Advancing DfE and Green Chemistry, and Drivers for Innovation and Marketing Safer Products.

- **4:30-5:15 pm**  Innovation and Sustainability Opportunities in a New Era
  
  - **Andrea Larson**
  - **Noran Eid**
  - **David Levine**

- **5:15-6:00 pm**  Reception

- **8:30-10:00 pm**  After Dinner Meet Up
Wednesday

- 8:00-8:30 am  Breakfast
- 8:30-10:30 am Using REACH Compliance to Advance Green Chemistry and DfE
  Objective: How can REACH preparation be a stimulus for green chemistry and DfE?
- 10:30-10:45 am  Break
- 10:45-11:15 am Working groups report back
- 11:15-12:45 am  Meeting Today’s Chemicals Management Challenges with New Approaches and Collaborations
  Objective: What innovative new tools exist to advance green chemistry and DfE in commerce?
- 12:45-2:00 pm  Lunch
- 2:00-3:00 pm  Next Steps
- 3:00-3:45 pm Concluding Speaker
- 3:45-4:15 pm Closing Remarks
- 4:15pm Adjourn

Christopher Blum
- Ethel Forsberg
- Barbara Hanley
- Anita Jain

Lauren Heine
- Berkeley Cue
- Julie Manley

Theo Colborn
Logistics