5th Annual Green Chemistry and Commerce Council Innovators Roundtable
Hosted by Sysco Corporation
Houston, Texas

April 26-28, 2010

Meeting Summary

Background

The Green Chemistry and Commerce Council (GC3) is now in its fifth year, having grown out of a 2005 conference hosted by the Lowell Center for Sustainable Production and the Darden School of Business on "Safer Chemistry Through Supply Chains." Since the initial conference, the GC3 has evolved into a vibrant informal, business-to-business discussion network of about 85 organizations across industrial sectors dedicated to advancing green chemistry and design for environment. From April 26-28, 2010, 80 individuals from industry, government, non-governmental organizations, and academia gathered for the fifth GC3 Roundtable at Sysco in Houston, Texas to discuss current opportunities and challenges for green chemistry and design for environment approaches. The desired outcomes of the Roundtable were to:

- Share information, experience, and understanding among a diverse group of companies and other stakeholders on advancing implementation of green chemistry and design for environment (DfE); and
- Develop projects and strategies to advance application of green chemistry and DfE in practice.

The meeting consisted of a combination of presentations and small and large group discussion, and ended with recommendations and next steps for GC3 participants. Speaker presentations, when slides were used, are available on the GC3 website at www.greenchemistryandcommerce.org/events.past.php.

MONDAY, APRIL 26TH

Welcome and Introduction to GC3 Innovators Roundtable

Richard Cottrell, Manager, Technical Services, Chemical and Environmental Products at *Sysco Corp.* welcomed participants to the meeting and introduced senior managers from Sysco to highlight the company's commitment to sustainability:

> *Larry Pulliam, Executive Vice President, Food Service Operations,* provided a background of the Sysco organization, which began with a vision to become the first "broadline" distributor in 1969. Today, the company is North America's number one food service marketer and distributor. Mr. Pulliam stated that Sysco undertakes many efforts to make their millions of transactions across the supply chain more sustainable.
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> *Craig Watson, Vice President, Agricultural Sustainability,* described Sysco's business strategy for sustainability and detailed Sysco's agricultural initiatives for achieving a

sustainable supply chain, which include initiatives on: integrated pest management, life cycle assessment, local food, and animal welfare.

Joel Tickner, Lowell Center for Sustainable Production, discussed the new opportunities that exist to make green chemistry and DfE top priorities now that major changes at EPA have prioritized toxics on the agenda and TSCA reform bills have been proposed in Congress. He noted that now is the time for champions of green chemistry and DfE to engage in the ongoing dialogue about sustainable chemicals management. He presented a year in perspective for the GC3, including highlights and accomplishments, such as:

- Publication of "Best Practices in Product Chemicals Management in the Retail Industry;"
- Publication of "Gathering Chemical Information and Advancing Safer Chemistry in Complex Supply Chains: Case Studies of Nike, S.C. Johnson, and Hewlett-Packard;"
- Publication of "Growing the Green Economy through Green Chemistry and Design for Environment;"
- Publication of GC3 brochure, "Moving Business Toward Safer Alternatives;"
- Publication of GC3 video, "A Call for Champions;"
- Organization and facilitation of GC3 panel at the Retail Industry Leaders Association Environmental Sustainability Compliance Conference;
- Organization of GC3 participant meetings with EPA, NIST, and Congressional staff in Washington, D.C.;
- Distribution of three quarterly e-newsletters;
- Facilitation of three quarterly webinars;
- Outreach and recruitment to new sectors;
- Presentations at major conferences and webinars; and
- Facilitation of press and stakeholder recognition of GC3 accomplishments.

He outlined some challenges to the application of green chemistry and DfE in practice, including: prioritizing green chemistry and DfE in the era of Green Jobs; securing adequate resources for green chemistry and DfE; ensuring new policy developments that support innovation in green chemistry and DfE; making adequate information and tools available for company decision-making; enhancing communication and dialogue up and down supply chains; and making the case for green chemistry and safer products. He also highlighted some programmatic questions for the GC3, including: identifying focal areas of work that provide value added for participants; selecting projects that will engage participants and make concrete impacts; and engaging more "champions." He then presented a participant dues structure, approved by the Advisory Committee, to cover the GC3 operating costs in the coming year.

Overview of Working Group Activities

Advancing Design for Environment and Green Chemistry in Government

Bob Israel, Diversey, presented an update on the green chemistry incentives project and introduced a draft document outlining incentives compiled from a series of conference calls with various stakeholder groups and research on various state and federal initiatives. He noted the need to get better engagement of GC3 participants to highlight the breadth of incentives that could be used to drive the green chemistry pipeline.

Jessica Schifano, Lowell Center for Sustainable Production, described the efforts of the Lowell Center to engage GC3 participants to advance federal efforts on green chemistry and DfE, which included: GC3 participant meetings with Congressional staffers, EPA, and National Institute for Standards and Technology (NIST) in Washington, D.C.; conversations with the White House Council on Environmental Quality (CEQ) and the Office of Science and Technology Policy (OSTP); and regular communication with Congressional staffers about the progress of the Green Chemistry Research and Development Act. She noted possible opportunities to advance green chemistry through inserting provisions in other legislation (America COMPETES, TSCA Reform) and strategically engaging with current efforts on green chemistry at OSTP and NIST.

Barbara Hanley, Hewlett Packard Company, presented an update on the university/business partnership and pilot project proposal, which provides a model to engage resources in academia to assess and develop safer alternative chemicals through a pilot project to assess hazards of phthalate and non-phthalate plasticizers using Green Screen.

Drivers for Innovation and Marketing Safer Products

Mark Buczek, Green Science Policy Institute, described the working group's accomplishments over the past year, which included the publication of "Best Practices in Product Chemicals Management in the Retail Industry," the organization and facilitation of a GC3 panel at the Retail Industry Leaders Association Environmental Sustainability and Compliance Conference, and the finalization of the green glossary. He suggested the development of an online resource for retailers as a next step for the working group.

Tools for Chemical Assessment and Safer Design

Monica Becker, Monica Becker & Associates, presented an overview of the work of the tools group from 2007 to the present and detailed the most recent publication of the group entitled "Gathering Chemical Information and Advancing Safer Chemistry in Complex Supply Chains: Case Studies of Nike, S.C. Johnson, and Hewlett-Packard." She explained that, as a follow-up to this recent publication, the work group has been pursuing a minimum data set project to identify a chemical data set that the GC3 can put forward as a minimum set of chemical data that suppliers should be expected to provide. She presented a memo summarizing key findings from a survey conducted among GC3 participants about chemical data collection efforts, needs, and expectations. *Mary Ellen Mika, Steelcase*, called for more GC3 participant engagement in these efforts. Ms. Becker also noted a Chemical Data Summit, a meeting to present and discuss all aspects of chemical data, as a potential future project for the work group.

A more detailed summary of working group activities are included as appendices to this document.

Discussion of Future Working Group Projects

Joel Tickner proposed a thoughtstarter on the reorganization of the GC3 around projects instead of working groups. Rather than three separate working groups with broad mandates, the GC3 would move towards organization around project committees led by one or two GC3 participants. There would be no more than four projects at any one time, while each project would have at least one GC3 participant leader and one Lowell Center liaison.

Overall, participants agreed in the discussion that this organizational model is better to get people involved in projects, justify dues, and provide tangible outcomes in a reasonable time frame. It would allow projects to be identified that are relevant to people who have been in different work groups and would help spur cross-collaboration of the groups. In order to make this structure effective, there needs to be good communication to keep participants up to date on the project work that is being undertaken. The newsletters, as well as the more strategic use of social media, may be able to serve these communication needs.

Some participants suggested that updating the business plan to reflect the changes in the structural organization is necessary. The business plan should lay out strategic themes and issue areas to be explored through project work and establish project criteria to ensure that the areas of focus of the current working groups are retained.

Participants also identified a number of potential new project ideas, including:

- Advancing green chemistry education for students and the workforce;
- Linking green chemistry to economic development, green jobs, and Clean Tech;
- Utilizing the UN-designated "International Year of Chemistry (2011)" as an opportunity to focus on green chemistry; and
- Highlighting the business benefits of green chemistry through an analysis of presidential green chemistry award winners and NSF grantees.

Supply Chain Dialog Revisited

This dialog followed from a panel at the 2009 GC3 Innovators Roundtable that highlighted the exciting tension between different levels of the supply chain around data needs. The GC3 provides a unique forum to bring out these tensions and have valuable discussions with companies throughout the supply chain. This year's panel focused on the challenges to advancing safer products in the apparel/footwear/textile industry. In this complex, global supply chain, how can communication be improved and how can the GC3 facilitate this process? How can different actors along the supply chain most effectively influence the design and application of safer chemicals and products? What needs, opportunities, and challenges for improving supply chain management have emerged?

> *Chris Binnicker, Anvil Knitwear, Inc.*, described the efforts undertaken by his company to move beyond compliance with government regulations to reducing the environmental impact of their production processes. He described Anvil's efforts to improve its production facility over the last three years, including: utilizing organic cotton, setting a solid waste goal of zero, reducing water consumption, improving water treatment technologies, striving for ecocertification for dyes and chemicals, and reducing its carbon footprint. He noted that although the suppliers he works with understand that they need to provide certain information on the materials and chemicals that Anvil sources from them, it is difficult to ensure that raw material suppliers remain the same when sourcing dyes and chemicals, since these processes often change rapidly.
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> *John Frazier, Nike*, noted the difficulties of requiring significant amounts of information from suppliers throughout a very complex, rather unsophisticated supply chain, where there are few direct relationships. He described how Nike has to be prescriptive and

proactive in telling its supply chain what chemicals and materials are unacceptable. This also includes providing sustainable chemical guidance—calling out specific chemistries, materials, processes, and manufacturers as more sustainable. He detailed Nike's internal efforts to advance green chemistry, including internal competitions to drive product design to safer materials, goal-setting, and sharing innovations in safer materials with others in the textile industry.

Panelists described a number of challenges in dealing with safer chemistry concerns in the supply chain. In many cases, companies are unable to tell what is in the supply chain. The supply chain is largely unsophisticated and is unable to provide information when it is requested. Even if some information is available, there are frequent changes in raw materials from suppliers that are not communicated down the supply chain. In order to deal with these challenges, panelists noted that they focus on telling suppliers what to use and what not to use and participate in certification processes to identify safer chemicals, materials, and products.

There was discussion about how product declaration data collected by companies could be shared publicly. However, panelists noted that communicating product content to the public is problematic and incredibly difficult. Many people want this type of data, but it is unclear how it can be used effectively. It is also difficult to respond to requests for information when there is no context for how the information will be used.

There was also discussion about the threat of litigation around the environmental claims of firms and what was being done to ensure the continuation of disclosure around product content. Panelists noted that they only make claims that can be substantiated in order to proactively deal with the threat of litigation. There is a possibility that product content disclosure could be chilled by litigation, but panelists said they are still moving forward to provide the information demanded by consumers.

Participants also discussed how to push green chemistry innovation in the textile industry. Although there is excitement about the possibility of alternative non-chemical methods for dyeing, these technologies will take time to develop. In order to advance green chemistry, the industry must strike a balance between addressing current problems and looking to the future technologies that might be available down the road.

Training on the iSUSTAIN Green Chemistry Index

Amy Cannon, Beyond Benign Foundation, presented the iSUSTAIN green chemistry index, a tool designed for chemists working in the lab to assess processes and products based on the Twelve Principles of green chemistry. Chemists enter all the materials going into the process, materials coming out of the process, and the conditions used for the various steps in the process to create scenarios. The chemist can then evaluate the scenario based on the index, make changes to the scenario, and compare the metrics of different scenarios. The tool is transparent with regards to all of the weighting factors and the algorithms used to develop scores, with the hope being that a consortium of users would evaluate the weighting factors and assumptions to make sure there is agreement.

It was noted that the tool is not meant to create a standard or a seal of approval for processes and products. Instead, the goal is to assist designers in thinking through different scenarios so as to continually improve the processes and products that they create. It is also a useful tool for teaching sustainability.

There was a discussion about the data used to create the score for products and processes. Currently, there are 4200 raw materials in the database that are evaluated on safety, health, and environmental impact based on the European Union R-phrases. For example, the "safe product" component of the index is based on an evaluation of human acute and chronic toxicity and aquatic toxicity. There was also a question of how data gaps are handled in the tool. Concerns about the data are balanced with the transparency of the tool, which allows for trade-offs to be considered and weighting factors and assumptions to be questioned.

TUESDAY, APRIL 27TH

DfE Technical Improvement Efforts

Clive Davies, U.S. Environmental Protection Agency, discussed current efforts of the DfE program at EPA. The DfE program will complete alternatives assessments for uses in EPA's jurisdiction of decaBDE, phthalates, and bisphenol A as part of EPA's development of chemical action plans on these substances. In addition, the DfE safer product labeling program has invested substantially in making the DfE recognition process more transparent and replicable by developing master criteria for human health and the environment and revising audit provisions to meet needs for state purchasing programs. Other DfE program efforts include: a lifecycle assessment on nanoenabled batteries for hybrid and electric vehicles; enhancing standards to include packaging, recyclability, flammability, and ingredient communication; and hosting a pesticide program dialog committee to develop pilot use of the DfE logo on pesticide products.

There was some discussion about the program's outreach to the general public. Currently, the DfE program is engaging in more outreach than in the past in order to encourage manufacturers to go through the DfE process. To date, the program has developed a platform and outreach materials that are being reviewed in the agency.

Keynote Address: John Warner, Warner Babcock Institute for Green Chemistry

John Warner, Warner Babcock Institute for Green Chemistry, explained the relationship between green chemistry and sustainability. He noted that sustainability is a big umbrella concept that can be applied to many different areas and disciplines (e.g. health care, economics, social justice, materials and chemicals, etc.). The materials and chemicals subset of sustainability can be referred to as sustainable chemistry. Within sustainable chemistry, there are also a number of subsets, such as alternative energy, water, green chemistry, chemicals policy, end-of-pipe, etc. Thus, green chemistry is just one part of sustainable chemistry which is just one small piece of sustainability. He highlighted the important relationship between green chemistry and alternatives assessment and DfE. The later are tools for assessing and comparing available chemicals and materials to figure out which are preferred. When these programs identify gaps, it is the job of green chemistry to invent an alternative to existing chemicals and materials that are problematic.

He also described the "reaction coordinate diagram" of green chemistry advancement. In order to advance green chemistry, both beneficial thermodynamics and kinetics are needed to make the process happen. One way to spur the process is to lower the activation energy. For example, chemicals policies that ban problematic chemicals make the status quo a little more uncomfortable and lower the barrier for investment. Subsidies to promote a new material make the benefits more profound and provide a greater eventual return on investment.

Ultimately, he noted, the advancement of green chemistry and achieving sustainability as a society requires a broad, systemic approach with actions in regulation, markets, and science, and the humility to get together and make progress.

There was discussion about understanding the relationships between regulation, markets, and science in order to take appropriate policy action to advance green chemistry. Dr. Warner noted the need to ban chemicals as well as the need for more research money to invent new green chemistry technologies to replace problematic chemicals.

The importance of green chemistry education for chemistry students and chemists in the workforce was acknowledged. Dr. Warner discussed the possibility of requiring chemistry training to include the understanding of hazard and mandating that anyone who makes a new molecule demonstrate whether they are about to make something that is hazardous or toxic.

There was also discussion about the development of and direction for green chemistry standards. Dr. Warner stated that there is a real need to be able to define what we want, but the problem is that standards only reflect what is on the market now and thus, could be a big inhibitor for innovation in new green chemistry technologies if we are not careful.

The Elephant in the Room: Selling Green Products in a Tough Economy

In a difficult economic climate, there are many challenges to marketing and selling green products. What are the main challenges to selling green products in a touch economy? What solutions are companies finding to overcome these challenges? What can be learned from early leaders in green products? How can there be stronger drivers of green products?

> *Marilyn Johnson, IHS*, discussed tools for retailers to deal with regulatory challenges and leverage regulation to become more innovative. Ultimately, retailers need a multi-faceted approach, which includes new tools and approaches, collaboration, and innovation, to deal effectively with regulatory challenges.
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> *Ann Blake, Environmental and Public Health Consulting*, described the GoodGuide, a tool for consumers to make decisions about product purchasing. GoodGuide provides consumers with information about the health hazards, environmental life cycle, and social impacts of products. Manufacturers can also benefit from the GoodGuide by using it as a way to communicate the health, environmental, and social attributes of their products to consumers and as a way to make decisions and gain insight about their products through the GoodGuide scores.

Dave Rapaport, Seventh Generation, highlighted product ingredient disclosure as a big part of why green products succeed in the market. Seventh Generation is committed to fully disclosing ingredients on product labels to serve consumers' right-to-know and build trust. To fulfill the mission of transparency, the company is undertaking efforts to uncover trace materials present in ingredients used to make products and to educate and engage consumers beyond the label. He noted that transparency not only contributes to success of green products in the marketplace, but also contributes to innovation.

Sarah Beatty, Green Depot, detailed how retailers can form effective collaborations with consumers, advocates, and the media to overcome consumer malaise and greenwashing to sell green products. Retailers, as the front line with consumers, can leverage this position to their advantage. Some of the ways in which retailers can capitalize on their relationship with consumers include: setting sustainability goals, commitments, and objectives; demonstrating participation in the local community; leveraging vendor programs in the supply chain; sharing environmental performance with customers; ensuring quality control; fostering education and leadership; and developing creative ways to showcase environmental issues.

There was discussion about how to engage retailers in greening supply chains. Panelists noted that developing relationships with vendors and product manufacturers to effectively communicate the benefits of green products to consumers and aligning with advocacy organizations to present a simple framework for understanding the needs for and benefits of safer products could help move supply chains toward the development of safer products.

Participants discussed whether extensive labeling is really justified by consumer demand or if it is simply part of a business model. Panelists noted that although individual consumers might not be interested in inspecting an extensive label, there are many other audiences that distill this information to influence broad consumer trends in a variety of ways. The use of transparency as a risk mitigation strategy was also discussed. Challenges to transparency in complex supply chains, such as the extent of disclosure (i.e. disclosing ingredients in an end product versus other inputs along the life cycle of the product) and the integrity of the information received from the supply chain, were considered.

There was also discussion about the role of educating consumers and institutional purchasers about greener, safer products. Panelists explained that distributors, vendors, suppliers, and manufacturers should engage retailers in sharing sustainability values and missions and work collaboratively with retailers to educate customers.

Mechanisms for Data Sharing

Many actors throughout the supply chain are interested in collecting data on chemicals. What are the drivers for chemical data collection? How are the data demands of customers, formulators, and fabricators different? How could data collection be improved upon through collaborative effort and new models? How might TSCA reform affect chemical data requirements in the U.S.?

Lindsay Dahl, Safer Chemicals, Healthy Families Coalition, detailed the role that federal and state policies can play in establishing minimum chemical data requirements that protect public health and the environment and help businesses make better decisions. She noted that the proposed TSCA reform legislation gives EPA the authority to create minimum information requirements on all chemicals.

Mary Ellen Mika, Steelcase, described the chemical information needs of a product fabricator and the challenges she faces in trying to get the chemical content information for her company's products. She noted that most of the data collection is done manually by the company and is tailored to the information that the company needs for regulatory and certification purposes.

Topher Buck, GreenBlue, presented the CleanGredients database, an online database of chemical ingredients used in cleaning products. He noted that this tool helps to overcome the challenge of sharing toxicological data without compromising proprietary business information by sharing data at a resolution that is precise enough to indicate a hazard or benefit, but not precise enough to reveal proprietary information. By sharing hazard data and information relevant to environmental purchasing, eco-labeling, and sustainability, the database helps formulators find better ingredients and allows suppliers to showcase their ingredients with positive human and environmental health attributes. Although the database currently lists cleaning product ingredients, the database could be expanded to other formulated product categories.

There was discussion about whether industry-wide collaborations could be used to collect chemical data information. Panelists suggested that there might be baseline data that is needed industry-wide, but even companies across a single industry might not have all data needs in common. It was noted that the evaluation of chemicals is industry specific and the depth and breadth of evaluation is a different process based on the use of the chemicals. However, this type of collaboration would be a significant help to suppliers.

Participants discussed the barriers to the expansion of CleanGredients to other formulated product categories. Some participants suggested that companies need justification for reformulating their products to include ingredients that have positive human and environmental health attributes. Others suggested that recognition programs might be one way to drive reformulation. Some industries have more interest in evaluating ingredients than others and those industries could benefit from the expansion of CleanGredients.

Participants also discussed how to connect the work that has been done to develop data collection tools with state and federal policy initiatives.

Learning Lessons from the Pharmaceutical Industry

The pharmaceutical industry has been a leader in incorporating green chemistry into their business model. What are some examples of green chemistry innovations in the pharmaceutical industry supply chain? How has the pharmaceutical industry interacted with their suppliers to obtain a breadth of toxicological data and how can that information be applied to green

chemistry development in other sectors? How can the pharmaceutical industry's experience with chemicals management issues be useful to companies in other sectors?

> *Berkeley "Buzz" Cue, BWC Pharma Consulting, LLC*, described the recent work of the ACS Green Chemistry Institute Pharmaceutical Roundtable. He detailed the Roundtable's members, strategic priorities, and accomplishments. The Roundtable's strategic priorities include: informing and influencing the research agenda; educating leaders; collaborating globally; and developing tools for innovation.
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> *Mike Ganey, Pfizer*, highlighted both the economic and environmental benefits of the use of green chemistry in the pharmaceutical industry. He detailed some parts of the pharmaceutical supply chain that have been impacted by green chemistry, including: evaluation of suppliers to understand what materials are being used and how they are being used; second generation process changes to reduce costs of production by reducing solvent usage and waste; and a shift toward different, greener engineering approaches.
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> *Ann Lee-Jeffs, Johnson & Johnson*, presented Johnson & Johnson's sustainability journey. She noted that leading companies are beginning to integrate sustainability into their core business strategy to create new value for their products. At Johnson & Johnson, sustainability efforts are driven by their credo and company-wide goals. In order to move toward more sustainable products, Johnson & Johnson utilizes the Earthwards Product Scorecard to analyze products based on materials, packaging, energy, waste, and water. Other initiatives at Johnson & Johnson include: a procurement sustainability initiative; a sustainable packaging strategy; and the Gaia chemical scoring system.
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> *Arthur Shaw, U.S. Food and Drug Administration*, detailed the Drug Master File, a process by which the FDA helps manage information from suppliers in the pharmaceutical industry as part of the new drug application process.

There was discussion about how green chemistry is being integrated into the pharmaceutical products themselves, rather than just the production process. Participants were interested to hear about developments in drug-delivery improvements and the opportunity to create pharmaceuticals with lower environmental persistence. Panelists suggested that the pharmaceutical industry needs to start to think about applying design criteria to reduce human exposure.

Participants discussed how the DMF process might be applied to industrial chemical information flows. Panelists suggested that the reason why the DMF works is that the pharmaceutical industry is highly regulated and the regulatory framework requires that something is known about the manufacturing process. As a result, the pharmaceutical industry has knowledge about what is being used in the process, but this is not the case for industrial chemicals.

Panelists also discussed the challenges of communicating with suppliers. For Johnson & Johnson, it is often difficult to figure out what is in medical devices and consumer products. In order to get this information, the company tries to define the information that is material to their

business, tailor questions to suppliers, and develop strategies for communicating with suppliers. Pfizer has supplier qualification procedures as part of inspections for good manufacturing practices and only selects vendors that would allow Pfizer to review and approve any process changes before making them.

WEDNESDAY, APRIL 28TH

The Role of Nanotechnology in Green Chemistry and Product Design

Kristen Kulinowsky, Center for Biological and Environmental Nanotechnology, described the cross-disciplinary efforts necessary to develop nanotechnology and understand the implications of the technology. She highlighted the need to understand the special biological or environmental properties of nanoscale materials and the impact these materials might have on workers, consumers, and the environment. She introduced the GoodNanoGuide, an online resource that collects information about the safe handling of nanomaterials. She noted that there is much promise with nanotechnology, including advancements in cancer therapy, tumor detection, and water treatment, but the benefits and the risks of this new technology must be balanced.

Mike Wong, Rice University, described the application of nanomaterials to remove chlorinated contaminants from groundwater. He detailed how nanocatalysis using a combination of gold and palladium is employed to chemically break down chlorinated contaminants into something that is safer.

There was discussion of how nanocatylsis might be applied to pharmaceuticals in water. The gold-palladium catalyst breaks halogenated bonds and could possibly be effective in breaking down pharmaceuticals in the environment.

Participants discussed the development of tests, assays, and quick screening methods to get a better understanding of the health and environmental hazards associated with nanomaterials. Panelists noted that two major international forums are working to develop testing methods. There are also partnerships between industry and non-governmental organizations to develop frameworks for evaluating the risk of nanomaterials.

Agency Perspectives on a Green Chemistry Transition

Federal and state agencies play an important role in facilitating a transition to a green economy. How can these agencies better act as a resource to firms pursuing green chemistry and design for environment solutions? What plans do these agencies have to advance green chemistry and DfE solutions and implementation?

> *Barbara Cunningham, U.S. Environmental Protection Agency*, described how the EPA is trying to identify and drive innovation toward safer chemistry, technologies, and products through: chemicals management reform principles; Green Chemistry Challenge Awards; DfE greener chemistry product recognition; alternatives assessment; green engineering; new chemicals pollution prevention recognition; education and technical assistance; and standards development.

Charles Geraci, NIOSH Nanomaterials Research Center, discussed NIOSH's Prevention through Design program that works to build in good health, safety, and environmental concepts during the design phase. He also highlighted NIOSH's Nanomaterials Initiative, which strives toward the responsible development of nanotechnology by investigating the implications and potential hazards of nanomaterials, developing interventions, and deploying guidance globally.

Ken Zarker, Washington Department of Ecology, highlighted state-level efforts that may help to spur green chemistry innovation and the development of new safer alternatives. He noted the efforts of the Interstate Chemicals Clearinghouse (IC2), the National Pollution Prevention Roundtable and the implementation of the Washington State Children's Safe Products Act and other state legislation on safer products, green chemistry, and pollution prevention planning, as driving forces for green chemistry and DfE.

Kurt Middelkoop, Texas Manufacturing Assistance Center, described a variety of efforts at National Institute of Standards and Technology (NIST) to advance green chemistry and the transition to safer chemicals, materials, and production processes. NIST's Manufacturing Extension Partnership helps to ensure the manufacturers have the right technologies and techniques to stay competitive and provides green training to small manufacturers. NIST's Green Suppliers Network is a partnership between EPA and NIST to provide lean and clean assessments to small and medium-sized enterprises. NIST also partners with the EPA, Department Of Energy, and Small Business Administration to provide E3 (Economy, Energy, and Environment) to provide technical assessments and recommendations for facilities. NIST's Technology Innovation Program (TIP) provides funding for high-risk, high-reward research in critical areas of national need, which includes sustainable chemistry.

There was discussion about the biggest challenges in advancing green chemistry. Panelists suggested that green chemistry does not have its own identity and does not have the same platform as nanotechnology. In order to make green chemistry more prominent, the case for green chemistry must be communicated effectively by: showing the opportunities and the market for green chemistry; highlighting it as a tool of economic development; and demonstrating the financial, environmental, and health benefits.

Participants also discussed ways in which green chemistry can be highlighted as an economic development issue instead of an environmental issue and ways in which green chemistry can be embedded in issues that already have support, such as green jobs and Clean Tech.

Working Groups Report Back: <u>Industry/Academic Partnerships</u>

In preparation for the Roundtable, Greg Morose drafted a proposal for collaboration with the Lowell Center for Sustainable Production and the University of Massachusetts Lowell to establish a model of how GC3 companies could partner with academic institutions on an on-going basis to find solutions to reduce the use of chemicals of concern in relevant products.

This partnership would integrate and expand existing efforts on safer materials research in the Lowell Center for Sustainable Production, the Toxics Use Reduction Institute, and the UMass Lowell College of Engineering (including biobased materials development in the Massachusetts Biomanufacturing Center in Chemical Engineering and sustainable plastics in Plastics Engineering). The Lowell Center has conducted several projects on evaluating safer chemical alternatives and promoting safer chemical policies. The Toxics Use Reduction Institute has twenty years of experience working with Massachusetts companies to adopt new and safer chemicals with great success. For applications involving nanomaterials, the Lowell Center would partner with researchers at the Center for High-rate Nanomanufacturing (CHN) to develop and use safer nanomaterials. CHN is a collaboration of researchers at the University of Massachusetts Lowell, Northeastern University, and the University of New Hampshire. Further, the Lowell Center could partner with safer nanomaterials researchers at the University of Oregon. Finally, the Lowell Center would partner with the Warner Babcock Institute for Green Chemistry for partnership projects involving green chemistry molecular development.

There are numerous benefits to the companies participating in this university/business partnership. The companies will be able to provide input as to the prioritization of chemicals of concern that will undergo research efforts. Also, the companies will have input as to the scope and timeline for the safer chemical and material research. The companies will also have access to interim research findings before final research results are made public.

Based on a survey of GC3 companies' interest in such a project in 2010, Greg's proposal suggested that the piloting of this collaborative model look at phthalate and non-phthalate plasticizers used in wire and cable (PVC and PVC-free) applications by GC3 companies and would use the Green Screen process for initial chemical evaluations. This pilot project will leverage UMass Lowell's expertise in both plastics engineering and alternatives assessments.

The major steps for conducting the proposed pilot project include the following:

1. Identify phthalates and non-phthalate chemicals that are used as plasticizers for both PVC and non-PVC applications.
2. Apply an initial screen for these alternatives using the Green Screen method. This will be conducted by a third party that has the necessary expertise and experience with conducting evaluations using the Green Screen method.
3. Conduct a review and validation of the Green Screen results. This will be conducted by the Massachusetts Toxics Use Reduction Institute.
4. If necessary, conduct an EHS evaluation for endpoints of interest that are not included in the Green Screen for the chemicals that achieve a Green Screen rating of Benchmark 3 or 4. This evaluation will be conducted by the Lowell Center for Sustainable Production.
5. Conduct a comprehensive technical performance and economic evaluation for the alternatives with an acceptable EHS profile. This will be conducted by the Lowell Center for Sustainable Production and the UMass Lowell College of Engineering.
6. If no alternatives exist with acceptable EHS, technical performance, and economic results, development of new chemicals/materials utilizing green chemistry principles will be initiated. This will be conducted by the Lowell Center for Sustainable Production and the Warner Babcock Institute for Green Chemistry.

Participants in the break out session agreed that partnering with the Lowell Center and UMass Lowell for the initial pilot project made sense and that the University's expertise in plastics engineering gave credibility to the project. Because the group has committed to a timeline for the pilot project that will allow for results to be shared at the 2011 GC3 Roundtable, it was decided that we should commit to completing steps 1-4 above and then reassess whether time or resources allow for steps 5 and 6. This 2-phase approach will also allow for much of the research to occur before more contentious issues, such as intellectual property, come into play and potentially slow the project down.

The group discussed a possible funding model for the project, including ways to use the Green Screen to pre-screen many plasticizers in a more cost-effective way. It was also suggested that companies that do not have a vested interest in the outcome of the project contribute financially and that companies which would benefit from the project contribute in-kind through staff time or testing facilities. Nike, for example, would be willing to consider funding the wire and cable project in the interest of establishing a model that may have applications to chemicals of concern in footwear and apparel in the future. A steering committee would need to be formed to oversee the disbursements of funding for the pilot project. The committee should include leadership roles from non-governmental organizations.

Before a funding model could be agreed upon, it was decided that Greg and the Lowell Center would put together an estimated budget for the first four steps of the project for discussion on a conference call at a later time.

Once the pilot project has been completed and the GC3 can show both that a partnership between business, academia, and non-governmental organizations is possible and that the collaboration generated useful information for the companies involved, the model can then be expanded to include a greater number of partners, a broader scope of chemicals and product applications, and/or the development of new chemicals and materials.

Working Groups Report Back: <u>Green Chemistry Incentives</u>
The intention for this project was to develop suggestions to motivate the green chemistry engine along the entire supply chain and make green chemistry more mainstream.

In preparation for the Roundtable, the Lowell Center drafted a paper on incentives for green chemistry adoption. Participants agreed that the draft paper needed to be more creative with identifying ways to accelerate the adoption of green chemistry and discussed how the document could be made more inspirational and more imaginative. Participants noted that currently, the draft paper significantly overlaps with the 2009 document "Growing the Green Economy."

Participants re-evaluated the scope and focus of the proposed project. This led to the identification of a number of different directions for the project, including:

- Update the "Growing the Green Economy" document, broadening the scope and audience and detailing incentives from the incremental to the truly transformative;
- Complete a retrospective analysis of Presidential Green Chemistry Award winners;

- Develop the business case for green chemistry, highlighting cost-savings, economic development potential of innovation;
- Identify green chemistry "grand challenges", i.e. common processes or technologies that could benefit from green chemistry innovation, areas for green chemistry opportunities;
- Develop partnerships with venture capitalists; and
- Conduct business plan simulations to identify opportunities for green chemistry in industry.

The group decided that the first step for the project should be updating the "Growing the Green Economy" document. Participants will review both the draft paper and the previously published document and comment on how the draft paper can be used to update the document, how the scope and audience should be expanded, and what additional incentives could be identified to accelerate green chemistry. Participants also suggested that once the document is complete, it could be used as the basis for engagement with other networks and as the basis for other projects the GC3 could undertake to advance green chemistry.

Participants agreed that a conference call to finalize the project scope, audience, outcomes, and timeline would be organized with the help of the Lowell Center.

Efforts to advance federal green chemistry policy were not specifically addressed, but seem to be a priority for many groups. Participants and the Advisory Committee will decide if GC3 should continue to play a role in these efforts.

Working Groups Report Back: <u>Retail Portal</u>

In preparation for the Roundtable, the Lowell Center drafted a proposal for the development of an online resource of product chemicals management systems currently in use or in development for retailers. This online resource would build on the work of the Drivers of Innovation and Marketing Safer Products working group who have engaged retailers around product chemicals management systems in developing their report: *Best Practices in Product Chemicals Management in the Retail Industry*, and in introducing their work at the Retail Industry Leaders Association's (RILA) Sustainability and Compliance Conference in October 2009.

As most retailers are at the beginning stages of seeking ways to identify chemicals of concern in products and in transitioning towards safer alternatives, they are in an important position to make significant changes in the supply chain to support green chemistry application. By developing an online repository of information about product chemicals management systems currently in use by retailers or currently under development, they can be supported in this transition.

Developing this online resource was discussed in detail. The specific goal of the project is to develop a web resource/inventory of currently known systems (existing or under development) and tools for the consumer product sector (and retailers) to help them establish a baseline of product information and green their supply chains.

This online resource will be targeted to manufacturers and retailers who are interested in developing this baseline of products information and greening their supply chain. The information gathered for the online resource will be a matrix of product chemicals management systems, with a description of use, boundaries and limitations, and other criteria as determined

by the project group. The retailer report mentioned previously gathered this information for 7 retailers in a case study format. It was agreed however, that the quickest and easiest way for information to be accessed online would be in a matrix format, rather than a case study format.

The group established a timeline for the work as follows:

- Request information from the GC3 about existing tools and systems – by mid-May 2010
- Evaluate the information gathered and develop a draft matrix – by mid-June 2010
- Research and collect data on identified tools and systems – through July 2010
- Develop a draft matrix of information for GC3 evaluation and comment – by mid-August 2010
- Release the matrix publically – by early October 2010

How this resource will be updated over time, how to encourage development of tools and systems when gaps are discovered, and whether the matrix can be expanded to different sectors are all areas that require additional input from the group before final decisions can be made.

Working Groups Report Back: Minimum Chemical Data Set (MCDS)

In preparation for the Roundtable, Monica Becker drafted a memo summarizing the results of a survey of GC3 companies to further understand the types of chemical information firms want, the data they are currently able to get, the information they would like to receive, and the form in which they would like to receive the information.

Participants discussed the purpose of establishing a minimum chemical data set and the type of chemical information that should be considered in such a project.

Two participants then gave short presentations detailing related activities. Teresa McGrath, NSF International, discussed the NSF/GCI ANSI chemical information standard process. The standard could serve as a minimum information dataset that gets plugged into benchmarking tools such as the Green Screen and iSUSTAIN. The chemical would require a minimum amount of information to pass the standard, and while each data point would not need to be completed, companies would need to explain why certain data was not provided. The focus of the standard is on chemicals manufacturing and the output is a standardized data report. Mark Rossi, Clean Production Action, outlined the work done by Healthcare Without Harm to develop questions for purchasers. He also outlined work being done by the Business-NGO working group to create standards for providing chemical ingredient data. One of these benchmarks is to "know and disclose product chemistry," and there are ways to assess how close a manufacturer is coming to that goal.

There was significant discussion about the scope of the MCDS project: what types of data do companies need and how is that information presented? Some of the key issues discussed included:

- The need for flexibility in the kind of data required, depending on the particular end uses of the data.
- While no company is able to get a full set of data, having a clear outline of the types of data a product manufacturer should be getting ensures due diligence is being done. It is

clear that product manufacturers may ask for data they will never get. Thus, having a system that will allow a less sophisticated supplier (that may not even know product ingredients) to provide data in a useful way is important.

- There are two types of data that seem to be critical: product formulation data, and hazard data.
- For many sectors, the key driver for information is compliance. For example, retailers need to know what data they need to be compliant. The set of data needed to advance green chemistry may be different. Full disclosure at the CAS level may help address both.
- One of the most important deliverables from this project could be clear communication to the supply chain of why this data is critical for both compliance and advancing safer materials. This education component is what sets this initiative apart from other data initiatives – it will cover the complexity of supply chains and challenges in getting data. We know we're not going to get great data, but we're trying to make the supply chain understand that these are the types of data companies would like to see and why and this is the direction we'd like suppliers to move in.
- The main focus here is on fabricators and formulators – not so much about how to design safer chemicals but rather what do these companies need to design safer products.

Participants discussed the idea of a "data summit" as a way to advance dialogue along supply chains about the types of data needed to advance safer products. This is one way to ensure that suppliers hear from formulators and fabricators about their needs. One question was whether the summit would be for formulators and fabricators only or if suppliers would be included as well. Another question was how this process could flow into SAICM, or other harmonized systems for data reporting, such as GDSN?

Some remaining questions in any next steps included: How to deal with data gaps and what is sufficient data; how to present data to "consumers" to make informed decisions; and how to make value judgments based on that data.

Participants discussed a variety of options to advance work on a minimum chemical data set, including:

- Host chemical data summit;
- Develop a specific dataset with content data and hazard data;
- Develop a thought starter based on survey responses;
- Research examples of how firms are dealing with the question of chemical data;
- Educate the supply chain as to chemical data needs;
- Collaborate with NSF/GCI in ANSI chemical information standard process; and
- Collaborate with the CPA Business/NGO Working Group on chemical identity/disclosure work.

Participants agreed to develop a thought starter based on the survey responses to be used as the basis for a chemical data summit. As a first step, the group will hold a small retreat to work on the thought starter as well as planning for the data summit. The project will hold standard monthly calls to develop the thought starter and plan the chemical data summit. A smaller work

group was established to provide more form and direction to the project. That smaller group will then hold calls with the entire GC3 to discuss next steps.

Next Steps for the GC3
Participants discussed next steps for the GC3 and identified key priorities for the coming year:

1. Project leaders to champion projects in order to:
   - Complete an evaluation of alternative plasticizers in PVC for wire and cable applications and establish a model for industry, university, and non-governmental organization collaboration.
   - Revise the "Growing the Green Economy" document.
   - Compile an online matrix of product chemicals management tools and systems as a resource for retailers and the consumer product sector.
   - Draft a minimum chemical data set thoughtstarter and host a chemical data summit.

2. Lowell Center to implement the dues structure as discussed in the meeting.

3. Continued growth of the GC3 network and establishment of the GC3 as a leading edge, viable entity to promote green chemistry and DfE.

4. Potential coordination of efforts with other organizations, such as the Business-NGO Working Group.

Participants discussed possibilities for the location and topics for the 2011 Roundtable. Some suggested topics include: international perspectives (Asia, Europe); green chemistry education; start-ups developing alternatives to chemicals of concern; challenges to commercialization of green chemistry innovations; update on the California Green Chemistry Initiative; and update on iSUSTAIN.

Participants suggested that next year's meeting include more time for networking and start at noon on day one and end at noon on day three. There was agreement that the working group break-out sessions should be held on day two of the meeting. Participants suggested engaging more small and medium enterprises as well as local companies for the next meeting. They also suggested that sessions be conducted with more opportunity for a larger discussion rather than a question and answer session with panelists.

Appendix A: Advancing Design for Environment & Green Chemistry in Government Working Group Update

Following the 2009 GC3 Roundtable, the DfE & Green Chemistry working group committed to several projects for the coming year:

- Pursue opportunities for outreach given the finalization of Growing the Green Economy, a joint report between the GC3 and the National Pollution Prevention Roundtable
- Continue to act as a stakeholder in EPA's Continuous Technical Improvement Group for the DfE program
- Begin work to find a project where GC3 companies could partner with academic institutions to find green chemistry solutions
- Begin work to identify incentives along supply chains which could speed the adoption of green chemistry
- Create an action plan to support the federal green chemistry bill

Outreach for GC3/NPPR Publication

Growing the Green Economy Through Green Chemistry and Design for Environment was published and formally released in September 2009. Hard copies were circulated to the National Council of Environmental Legislators, the National Pollution Prevention Roundtable, and the Environmental Council of the States. Electronic versions of the document are available from the GC3 and National Pollution Prevention Roundtable websites.

DfE Continuous Technical Improvement Work Group

Over the past year, staff of the DfE program have hosted bi-monthly conference calls with stakeholders to improve the transparency of its Safer Product Labeling Program. Participants in the calls have helped EPA identify communications needs and solutions to enhance the program's clarity and improve the value of the DfE brand.

In June 2009, DfE posted its Standard for Safer Products on its web site (www.epa.gov/dfe/standard_for_safer_cleaning_products.pdf). Recording the DfE product review criteria and process in the form of a standard was DfE's top goal to improve transparency. It was also something that many, especially those in the purchasing community, had asked the program to do. The Standard is written in plain English, covers all major aspects of the product recognition process, and incorporates by reference the DfE Criteria for Safer Component-Class Ingredients, which are also available on the site. All interested parties now have ready access to materials on the operation, attributes and life-cycle elements of the DfE labeling program.

In November 2009, DfE proposed its first enhancements to the Standard covering partnership oversight through an audit program, innovative dispensing systems for consumer products, and clarification of terms related to extension of recognition to third-parties. The enhancements received strong public support and were added to the Standard on March 1, 2010. Addition of an audit program—with its ability to ensure that recognized products contain the ingredients for which DfE authorized use of its label—will add extra credibility to the program and strengthen

the brand. Other changes—related to measuring product performance and evaluating VOCs—are under consideration and DfE is again calling on the Continuous Technical Improvement Group for their valuable guidance.

Late in 2009 DfE completed initial renovations on its web site (www.epa.gov/dfe). The site now has a new, fresher look and is geared more to consumers. It is also much easier for the public, partners and other stakeholders to navigate and find the information they need. Future upgrades will emphasize consumer communications and information on chemicals, as well as overall program transparency.

Partnering Industry with Academia

The subgroup looking to advance partnerships between industry and academia is proposing that the Lowell Center for Sustainable Production and the University of Massachusetts Lowell establish a model of how GC3 companies could partner with academic institutions on an on-going basis to find solutions to reduce the use of toxic chemicals in consumer products. To that end, the group has initiated a pilot project to find alternatives to a toxic chemical of concern that is present in the supply chain of GC3 companies. The focus of this pilot project will be the use of plasticizers (both phthalates and non-phthalates) in PVC and non-PVC applications, assisted by the Green Screen process for initial chemical evaluations. The project will coordinate with Clean Production Action, U.S. EPA DfE, and the American Chemical Society Formulator's Roundtable for this effort.

Incentives for Green Chemistry

To locate incentives for green chemistry adoption along supply chains, the Lowell Center collaborated with Clean Production Action, the National Pollution Prevention Roundtable, and Environmental Health Fund to host a series of conference calls with chemical manufacturers, chemical users, and state agency technical assistance providers. Each call served as a focus group through which incentives for green chemistry most relevant to each community could be discovered. Based on these discussions, a briefing paper has been drafted, outlining economic, regulatory, research, and information incentives for the expanded use of green chemistry in industry. The content of the draft as well as its audience and possible intended uses will be further discussed in Wednesday morning's break-out session.

Support for Green Chemistry R&D Act

The Lowell Center has taken the lead on engaging GC3 participants to advance federal efforts on green chemistry and design for the environment. On September 16 and 17, 2009, GC3 participants visited Washington, D.C. to show support for green chemistry and design for the environment principles. Participants met with representatives from both the legislative and executive branches, including Assistant Administrator Steve Owens (EPA), Assistant Administrator Paul Anastas (EPA), NIST staff, Representative Olver's office, Representative Gingrey's office, Senator Snowe's office, Senator Rockefeller's office, and Senate Commerce Committee staffers.

Following the September visit, the Lowell Center has been in contact with staffers from the Senate Commerce Committee, who have reported that there has been no significant progress on the federal green chemistry bill. The Lowell Center has also been in contact with staffers in

Congresswoman Niki Tsongas' office regarding the promotion of DfE and other prevention programs at EPA. In addition, the Lowell Center has spoken with staff at the Council on Environmental Quality (CEQ), who reported that TSCA reform, not green chemistry, is their priority; however, they support TSCA reform efforts that encourage green chemistry where appropriate.

In order to facilitate GC3 participants' commitment to securing the reintroduction and passage of a Federal Green Chemistry Research and Development Act and to strengthening federal green chemistry and DfE activities at EPA and other agencies, the Lowell Center plans to continue engagement with Senate staffers for progress updates on a bill, pursue discussions with Congresswoman Tsongas' office, in coordination with Representative Olver's office, to discuss a strategy to better fund DfE and other prevention programs at EPA, engage participants in the NIST Technology Innovation Program industry dialogue about research needs and challenges in green chemistry, and facilitate other GC3 participant engagement activities to advance these efforts as they arise.

Appendix B: Drivers for Innovation and Marketing Safer Products Working Group Update

In 2009 the Drivers for Innovation and Marketing Safer Products working group continued their work with retailers to drive the supply chain toward safer chemicals by: researching product chemicals management systems in the retail industry; and by finalizing a glossary of "green" marketing terms that retailers, manufactures and consumers can use to guide them in the absence of clear consumer labels and a definition of green.

The Role of Retailers in Driving the Supply Chain Toward Safer Chemicals

Best Practices in Product Chemicals Management in the Retail Industry

The group released a report, Best Practices in Product Chemicals Management in the Retail Industry, in December 2009. Faced with increasing demands to understand more about the chemical ingredients and toxicity of the products they sell, the report looks at seven innovative retailers and the systems they have developed to manage chemical ingredients in their products. The report examines the wide range of influences on retailers to encourage the adoption of product chemicals management systems; the specific product chemicals management systems that Apple, Boots, Green Depot, Patagonia, REI, Staples, and Walmart have adopted; and the challenges, benefits, and best practices identified in the development and implementation of these systems.

Six best practices were identified in implementing a product chemicals management system:

1. Gaining Commitment from the Top - securing a commitment from leaders in the organization that a product chemicals management system is important.
2. Collaborating with Direct Suppliers - communicating expectations with suppliers and working with them while they conform to new requirements.
3. Engaging with a Wider Net of Stakeholders - working collaboratively with suppliers, advocates, other retailers, and sector-wide and industry-wide groups in the development of a products chemicals management system.
4. Educating Consumers - making it easy for consumers to purchase safer products by providing educational materials on the products sold.
5. Managing the System Well - ensuring the system starts with a baseline of information that allows for continuous improvement.
6. Selecting the Approach that's Right for Your Operation - evaluating different systems to determine which product chemicals management system is the best "fit" for the retail operation. The report can be found at: http://www.greenchemistryandcommerce.org/projects.php

Attend the Retail Industry Leaders Sustainability and Compliance Conference, October 2009

In October 2009, a then draft of the Best Practices report was released at the 2nd Retail Industry Leaders Association Sustainability and Compliance conference. John Leyenberger (Walmart), Roger McFadden (Staples), and Yve Torrie (Lowell Center for Sustainable Production), gave a presentation of the draft report at the conference which was very well received.

A Glossary of "Green" Marketing Terms

Manufacturers, retailers and consumers are looking for guidance on the use and understanding of marketing terms. In an ongoing effort to help distinguish green products in the market place from greenwashing, the Drivers group continued to develop a glossary of "green" marketing terms to define some of the terms used on products. Version 1 of this glossary is currently being reviewed for release at the 2010 GC3 Innovators Roundtable.

Future Projects

There is interest by some leading retailers to develop a repository of information about product chemicals management systems, evaluating their development and status into the future. This will be discussed at this year's Roundtable meeting.

Appendix C: Tools for Chemical Assessment and Safer Design Working Group Update

Following the 2009 GC3 Roundtable, the Tools working group focused on two projects for the coming year:

- Completion of a series of case studies evaluating data sharing in selected supply chains
- Creation of a minimum chemical data set needed for improved chemicals management

Supply Chain Case Study Series

Three case studies of leading firms with complex supply chains were conducted to explore and share experiences on how these companies gather chemical information from their supply chains and how they use this information to develop safer products. Nike, SC Johnson and HP were featured as case studies. An accompanying summary report synthesizes the lessons learned and best practices that were distilled from each of the case studies. The individual cases and the summary report are available on the GC3 website
http://www.greenchemistryandcommerce.org/projects.php

Minimum Chemical Data Set

Many product formulators and fabricators are spending significant resources chasing after chemical data from their suppliers for green product design efforts, compliance, certification, etc. The GC3 Tools Group set out to explore whether companies' efforts at data collection could be made more successful and efficient over time if the GC3 outlined a "minimum chemical data set" or MCDS, that suppliers can be asked and expected to provide to their customers and that formulators/fabricators can, over time, come to expect from their supply chain. The group will publish a GC3 white paper outlining the MCDS.

The working group conducted a survey of GC3 companies to further our understanding of the types of chemical information firms want, the data they are currently able to get, the information they would like to receive and the form they would like to receive it. After a beta test of the survey questionnaire, the survey was distributed to the GC3 listserv, the membership of the Consumer Specialty Chemicals Association, and the American Apparel and Footwear Association. A summary of the findings is being compiled and a presentation of the major findings will be presented at the GC3 Roundtable in Houston to inform the workgroup discussion on the feasibility of developing an MCDS, and future directions for this work.