



**GCC3**

**INNOVATORS  
ROUNDTABLE**

**MAY 24-26, 2016 | BURLINGTON, VT**

Hosted By  
**seventh  
generation™**

## WELCOME

Dear Colleagues,

Welcome to Burlington and the 11th Annual Green Chemistry & Commerce Council Innovators Roundtable! For those of you who have attended in the past, we welcome you back and look forward to reconnecting. For those of you who are new to the Roundtable, we hope you find the meeting thought-provoking and productive.

Each year we endeavor to plan a meeting that encourages reflection and discussion; digs into important and emerging issues in green chemistry research and practice; sets up future GC3 projects; and provides significant time for connecting with old and new colleagues. This year, we are particularly focused on discussions that will lead to GC3 activities and outputs to advance our efforts to “mainstream” green chemistry. We hope you have read the GC3 [Agenda to Mainstream Green Chemistry](#) and other GC3 Strategic Initiative Reports that provided a foundation for the Agenda.



The GC3 relies on the insights and experience of its members, that span the value chain and sectors, for the success of its endeavors. We hope that you will be actively involved in the discussions over the next few days and become involved in GC3 projects. If your company is not yet a GC3 member, we hope the Roundtable will give you a flavor of what the GC3 has to offer in terms of knowledge, networking, and cutting edge projects.

I would like to thank our host for this year's Roundtable, Seventh Generation, for their leadership, not only in bringing the GC3 to Burlington, but also in driving sustainability in the consumer product space. Our top tier sponsors, Steelcase, HP Inc., and Beautycounter, are industry leaders and have long been strong supporters of the GC3's work. We also thank Johnson & Johnson, Levi Strauss & Co., New Balance and Novozymes for their financial support for the Roundtable.

The GC3 Roundtable is my favorite event of the year (no personal bias here) and Burlington is one of my favorite cities. We hope the Roundtable is a great experience for you and look forward to engaging you in impactful discussions over the next few days.

Sincerely,

A handwritten signature in black ink, appearing to read 'Joel Tickner', written over a horizontal line.

Joel Tickner

## UPDATE

# Retailer Group

The GC3 Retailer Leadership Council (RLC) is composed of GC3 member retailers that are pro-actively working to: understand what chemicals are in their products, engage their suppliers in improving chemicals management, identify safer alternatives to chemicals of concern, develop and implement sustainable chemical and product policies, and educate their customers. The RLC was formed following the GC3 Second National Summit for Retailers held in May 2013. The mission of the RLC is to promote safer chemicals, materials, and products across retail supply chains. Members include Best Buy, CVS, Home Depot, Lowes, Staples, Target, and Walmart. The RLC meets via conference call on a monthly basis and in person as needed.

In 2015-16, the Retailer Leadership Council (RLC) continued its dialogue with five major chemical manufacturers, including Akzo Nobel, BASF, Chemours, Dow, and Eastman. The GC3 convened this dialogue in 2014 to provide an opportunity for these companies to discuss how to improve product sustainability and find ways to accelerate the development and scale up of green chemistry solutions as well as increase transparency throughout the value chain.

As part of this dialogue, the participating retailers have shared feedback from their customers including their concerns about hazardous chemicals in products and their priorities and needs for safer products. Chemical manufacturers have shared publicly available information on their research, development, and commercialization processes, their processes for evaluating product safety and sustainability, the types of information they need to make the business case for pursuing green chemistry solutions, and their challenges in bringing these alternatives to market.

Each of the companies involved is on its own journey and at different stages in its product sustainability program. All share a commitment to having an open dialogue around five key areas to promote green chemistry research, development, and adoption. As a result of these discussions, the group has prepared the [Joint Statement on using Green Chemistry and Safer Alternatives to Advance Sustainable Products](#), which is available on the GC3 web site.

## Webinars

The GC3 hosted the following webinars of particular interest to retailers during 2015–16:

**The Clariant Portfolio Value Program System:  
How a leading specialty chemical company has developed  
a systematic approach for improving the sustainability  
performance of its products**

Speaker: Lynette Chung, Group Sustainable Development Policy and Advocacy officer, Clariant

**Marks & Spencer—The Journey to Accelerate Green Chemistry**

Speaker: Phil Townsend, Sustainable Raw Materials Specialist, Marks & Spencer

**IKEA's chemicals policy and actions to substitute chemicals  
of high concern**

Speaker: Therese Holmgren, Chemical Team Manager, IKEA.

**VAUDE—Our Journey to be the most Sustainable Outdoor  
Brand in Europe**

Speaker: Bettina Roth, Head of Quality Management and Chemical Management, VAUDE

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FOR MORE INFORMATION ABOUT THE GC3 RETAILER LEADERSHIP COUNCIL, PLEASE CONTACT:

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## UPDATE

# Education Group

### Safer Chemistry Training for Businesses

In 2015-2016, the GC3 education group launched the webinar-based green chemistry and safer alternatives curriculum. This webinar-based curriculum introduces basic green chemistry concepts and presents advanced topics, specific tools and applications of green chemistry.

Four webinars were conducted this year:

- **Introduction to Life Cycle & Alternatives Assessment**  
*Ann Blake, Principal and Founder, Environmental & Public Health Consulting, Thaddeus Owen, Chief Engineer, Sustainability, Herman Miller and Tom Etheridge, Program Manager, Hewlett-Packard* provided an overview of the landscape of available tools and provided examples of how companies are using these tools to screen alternatives and assess the life-cycle impact of their products.
- **Green Chemistry: Benign By Design**  
*John Warner, President & CTO, Warner Babcock Institute for Green Chemistry* provided an introduction to green chemistry and ideas for how to build this concept into education and industrial practice.
- **Chemical Hazard Assessment: Informing Decisions for Safer Chemicals, Materials and Products**  
*Lauren Heine, Interim Executive Director, Northwest Green Chemistry and Margaret Whittaker, Managing Director and Chief Toxicologist, ToxServices, LLC* introduced several types of chemical hazard assessments, sources of data, and strategies for dealing with data gaps. Example applications were presented to illustrate the range of possible uses.
- **Advancing Sustainability Through the Supply Chain—Effective Communication and Transparency**  
*Howard Williams, SVP Sustainability, New Ventures & Acquisitions, Construction Specialties, Inc., Andrea Schmidt, Senior Staff Program/Project Manager Product Sustainability, Seagate Technology and Todd Copeland, Environmental Responsibility Manager, Patagonia*, discussed how to effectively get information flowing through the supply chain about chemical hazards and green chemistry solutions.

These webinars are lightly edited to allow users to listen to the entire webinar or jump to a particular speaker. The training site also includes additional material for each topic. The next webinar will be on green chemistry metrics.

### GC3 Innovators Internship (formerly GC3 Fellows Program)

We are in our second year of the internship program, which places qualified graduate students into GC3 member companies for 10–12 weeks positions. The aim of the program is to introduce companies to prospective new hires who meet their green chemistry-related qualifications, while simultaneously helping the students learn the skills needed in industry. This year, four positions are available.

### Webinar for Students

In addition to the GC3 safer chemistry training program for businesses, the Education group partnered with Network of Early-Career Sustainable Scientists & Engineers (NESSE), the Green Chemistry Commitment (GCC) and the ACS-Green Chemistry Institute on a webinar where three professionals, *Irene Erdelmeier, Organic and Medicinal Green Chemist, Cofounder of Tetrahedron, France., Teresa McGrath, Environmental Regulatory Toxicologist, Valspar and Jon Smieja, Environmental Chemist, Global Sustainability, Steelcase*, discussed their career paths and presented recommendations to those looking to pursue careers in the field. The aim of this webinar was to increase awareness about companies that require green chemistry knowledge and skills in early-career scientists and to make the case for green science content within curricula. This webinar was followed by a webinar hosted by the GCC which highlighted student-led green chemistry initiatives in higher education.

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FOR MORE INFORMATION ON THESE PROJECTS, PLEASE CONTACT:  
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## UPDATE

# Mainstreaming Group

The capstone of the Mainstreaming Green Chemistry Project Group's work this past year has been the release of the GC3 [Agenda to Mainstream Green Chemistry](#). The Agenda is the result of two-plus years of research and discussions regarding the barriers and drivers of green chemistry, and the needs of the value chain involved in developing and advancing green chemistry solutions. This background work included literature reviews, interviews, a survey of GC3 member companies and original investigations—the latter two can be found on the Mainstreaming Green Chemistry Project group part of the GC3 website.

The Agenda helps us understand how we can meet existing demand and spur future demand for the more environmentally benign solutions that green chemistry provides. It also identifies five strategies that policy-makers, businesses, researchers, advocates, and other enablers can take to bring green chemistry to the mainstream:

- **Enhance Market Dynamics:** by continuing to build a comprehensive, ongoing understanding of green chemistry enablers, market drivers, and obstacles
- **Support Smart Policies:** by designing and advocating for innovative state and federal policies that increase the supply of and demand for green chemistry solutions
- **Foster Collaboration:** by facilitating the flow of information about green chemistry solutions among suppliers and product makers, and assembling partnerships to tackle priority challenges
- **Inform the Marketplace:** by disseminating information about green chemistry business, economic, and health benefits, as well as opportunities and funding
- **Track Progress:** by improving green chemistry metrics and periodically gathering and reporting data on progress.

The Agenda also specifies six actions that the GC3 itself is taking in the short term to make green chemistry mainstream practice. Among these actions are the convening of a national summit on green chemistry research and education that brings together government and academic institutions to create a new generation of trained experts in green chemistry; building model supply chain

## An Agenda to Mainstream Green Chemistry

Green Chemistry & Commerce Council



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partnerships to scale green chemistry solutions for chemical uses of concern; and creating educational, information and networking tools for innovators that will help speed the development and use of green chemistry solutions.

GC3 staff and members publicized the Agenda in articles in GreenBiz and ChemWatch, an [Ask the Innovators](#) event on the GC3/ACS Innovation Portal on the topic of "What Will it Take to Mainstream Green Chemistry," which can still be accessed on the Portal. A [press release](#) is available on the Mainstreaming Green Chemistry project group web page that we hope members will use to pen articles in company or other newsletters, or in other ways.

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The Agenda defines the mainstreaming of green chemistry as being when all chemistry is green chemistry, so that a distinction is no longer needed. But what is the vision of what this looks like, and who should be involved in helping to make this a reality? The project group provided input on these questions, building on the discussion of a “maturity model” of green chemistry held at last year’s Roundtable (see table below).

In January, the GC3 organized a congressional briefing on green chemistry with Senator Coons’ office and the ACS in Washington, DC, featuring Joel Tickner, David Constable of ACS, John Warner of the Warner Babcock Institute, Professor Adelina Voutchkova of George Washington University, and Jim Millis of BioAmber. Over 50 people attended the briefing, and it was covered by Inside EPA and Bloomberg BNA.

Senator Coons also participated in a members only webinar for the GC3, focusing on the elements of the proposed federal Sustainable Chemistry R&D Act, and its steps for passage.

Going forward, the GC3 Advisory Committee will oversee the effort to advance the strategies set forth in the Agenda. Specific projects to implement the mainstreaming mission will be housed within the GC3 project groups.

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FOR MORE INFORMATION ON THE MAINSTREAMING GREEN CHEMISTRY PROJECT GROUP, PLEASE CONTACT:

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| Green chemistry will be mainstream when:   | We will need these partners to help make this happen: |
|--|---|
| It is embedded in the sustainability goals, innovation, R&D and sourcing strategies of firms through design guidelines, personnel hiring and reward practices, and metrics | Businesses across value chain                         |
| It is an integral part of all chemistry education, including workplace education   | Educators, government, business                       |
| It is a core element of all government and private sector funding for chemistry and materials research and sustainability initiatives                                      | Businesses, government, investors                     |
| Products of green chemistry are readily available throughout the value chain at high performance and reasonable cost   | Businesses, researchers, advocates, consumers         |
| An ecosystem of green chemistry entrepreneurs is flourishing   | Government, business, advocates, researchers          |



## UPDATE

# Innovation Group

### The Green Chemistry Innovation Portal (“The Portal”)

The Portal is a new on-line platform for growing and connecting the green chemistry community, sharing ideas, and solving green chemistry challenges. The Portal is a partnership between the GC3 and the American Chemistry Society’s Green Chemistry Institute (ACS GCI). The current design for the Portal consists of two primary components: the Innovation Forum and the Innovation Map. The Innovation Forum is an online community to ask questions, discuss challenges, and share ideas about green chemistry. The Innovation Map shows connections between companies and research programs in green chemistry.

As with any Internet-based forum, the Portal’s usefulness and success depends on the number of users and diversity of interactions. Since the launch of the Forum in July 2015 we have seen steady growth in the number of views and comments, as well as posts on a wide range of green chemistry topics: from discussions of safer alternatives, to priority chemicals and functions, to showcasing innovative new products, to job postings. The Forum also serves as a hub for updates on the field of green chemistry and upcoming events. GC3 and ACS GCI staff act as moderators for the forum, monitoring submissions and recruiting experts within the field to respond to questions, encouraging interaction. By ensuring that every posted question gets a prompt answer our hope is to create a vibrant community of practitioners.

We held four text-based Q&A sessions, entitled “Ask the Innovators.” During these live events people interacted with innovators in industry, academia and government. The topics that we have covered were:

- **Spotlight on Berkeley’s Greener Solutions Program** — A conversation about the formation and success of Berkeley’s project-based class that partners students with organizations involved in sustainable chemistry
- **How Green is Your Raincoat?** — An exploration of the challenges around identifying green chemistry solutions for durable water repellent (DWR) technologies
- **What will it take to Mainstream Green Chemistry?** — A discussion of the strategies and barriers to making all chemistry green chemistry
- **What should Green Chemistry Education Look Like?** — A discussion of the Green Chemistry Education Roadmap and the future of green chemistry education

These Ask the Innovators discussions, which have attracted a combined total of more than 2,200 unique views and over 275 comments and questions, are now a regular feature of the Portal.

We are actively exploring other ways to engage the green chemistry community through this online tool.

### Collaborative Innovation Project Focus on Preservatives

The GC3’s Collaborative Innovation Project on Preservatives is working to accelerate innovation & scale of new, safe, effective preservative systems for personal care, household, industrial & institutional products; and create a new model of pre-commercial collaboration whereby companies with common technology needs can collaborate to accelerate the development and scale of these technologies.

In 2015 a group of ten CPG companies worked together to develop and disseminate a document that articulates the need for new preservatives, highlights the significant demand represented by the companies in our group, and provides a set of detailed development criteria for new preservatives, including performance, human and environmental health and safety, regulatory and other business requirements. The criteria document is generating significant interest on the part of suppliers, formulators and retailers.

Thirteen consumer product goods (CPG) companies and retailers have pledged or have already contributed to a second project as part of this effort—a collaborative, pre-commercial open innovation competition on preservatives—and we now have a path forward for ingredient suppliers to sponsor and participate in the project as well. We are working to finalize an agreement for the sponsors and then will move ahead to the finalize design and launch of the challenge. The collaborative innovation firm InnoCentive will be managing the challenge. The project is still open to companies to sponsor and participate.

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FOR MORE INFORMATION ON THESE PROJECTS, PLEASE CONTACT:  
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