



# 10<sup>th</sup> Annual GC3 Innovators Roundtable

## Session Summaries

**Wednesday, April 29<sup>th</sup>**

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### **Session V**

*What Makes Partnerships Work? Lessons from the Real World*

**Jason Wadsworth**, Wegmans

**Roger McFadden**, Staples

**Martin Mulvihill**, UC Berkeley Center for Green Chemistry

**Kaj Johnson**, Method

**Johanna Brickman**, Oregon BEST (*moderator*)

Staples and Wegmans have partnered in an effort to find a safer alternative to BPA-containing thermal paper. The impetus for the partnership was concern about the harmful effects of BPA from a local consumer advocacy group, who asked Wegmans about the ingredients in their register tapes. Wegmans reached out to Staples, who communicated with their supplier, improved transparency, and discovered that the thermal paper did contain BPA. Roger McFadden and Jason Wadsworth have worked together for 3 years to find an acceptable safer alternative, agreeing to avoid regrettable substitutions by thoroughly evaluating potential hazards of replacements. Roger reached out to the EPA's DfE team, who identified 14 alternatives, all of which unfortunately had unacceptable tradeoffs. Staples then reached out to chemical suppliers, and is currently in the process of investigating two safer alternatives—a drop-in developer replacement, and a process that creates a thermal image without the use of a developer. Next steps in the project involve Staples confirming performance and compatibility of these candidates, selecting one, and finalizing a business relationship with the supplier in order to present a new alternative to Wegmans. Wegmans will then test the new product in stores.

The Berkeley Center for Green Chemistry is pioneering a new model for business-to-academic partnership in its graduate Greener Solutions class. The class teams students from different scientific disciplines and partners them with industry to solve real problems with green chemistry solutions, both in the short- and long-term. The executive director of the BCGC, Marty Mulvihill, looks for business collaborations that include domain-specific technical expertise, pre-competitive challenges that affect the entire sector, a willingness to share results, and funding to support the class. A

biomimetic approach is preferred, and students should not have to sign a non-disclosure agreement.

The most recent company to collaborate with the BCGC Greener Solutions class is Method, which has been searching for a safer way of preserving aqueous cleaning products. The GC3 and multiple personal care companies have participated in and benefited from this collaboration, and the USDA has provided lab space, resources, and microbiology experts to assist. Kaj Johnson of Method feels the students bring a fresh perspective and creative nature-inspired ideas as they assist in identifying functional broad-spectrum preservatives using a rapid-screening approach. This process is generating interesting data, and could potentially be used in many other applications.

### **Opportunities for Safer Chemicals and Products**

- consumer-facing products such as register receipts
- safer preservatives in personal care and cleaning products
- specific business problems that can be solved more quickly with collaboration

### **Key Drivers for Green Chemistry**

- consumer demand for green chemistry
- increasing desire for safer chemistry from brands and retailers
- students interested in pursuing green chemistry careers

### **Challenges for Implementation**

- supplier resistance to transparency
- balance between rapid response and careful assessment of alternatives
- lack of trust across supply chain
- lack of immediately-available safer alternatives

### **Helpful Actions**

- increase transparency across supply chain
- define and understand challenges and opportunities
- take an orderly and prudent approach
- form partnerships across organizational “silos”, sectors, and disciplines
- engage students for fresh ideas
- develop rapid screening methods to accelerate R&D

### **Role for the GC3**

- foster partnerships across sectors as well as within
- increase trust across supply chain
- encourage transparency universally
- engage more universities and students in business partnerships