

GREEN CHEMISTRY ROUNDTABLE

Michigan Department of Natural Resources and Environment
(DNRE)

Constitution Hall, Katherine Cushman Conference Room
525 West Allegan, Lansing

January 19, 2011

Members in attendance: Mike Albu, Carrie Ziehl Brown, Patricia Beattie, Tracey Easthope (phone), Richard Helling, Kathe Hetter (phone), Yinlun Huang (phone), Dalila Kovacs (phone), Ted Schettler (phone), Andrew Such, Guy Williams, Gabe Wing, Byron Wolf (phone)

DNRE staff in attendance: Bryce Feighner, Karen Edlin, Jennifer Acevedo, Chris Affeldt

9:00 a.m. – 9:15 a.m. ~ Welcome and Introductions

Bryce Feighner, Office of Pollution Prevention and Compliance Assistance (OPPCA), DNRE

Discussion:

- Earlier this month, Governor Snyder issued Executive Order 2011-1, reorganizing the Department of Natural Resources and Environment to create the Department of Natural Resources and the Department of Environmental Quality (DEQ). Former Michigan Department of Agriculture Director Dan Wyant will be the new DEQ Director as well as group executive for the Quality of Life team consisting of the departments of Environmental Quality, Natural Resources, and Agriculture & Rural Development.
- The Michigan Green Chemistry Program will remain under OPPCA in the new DEQ.

Action Items:

- None required.

9:15 a.m. – 9:30 a.m. ~ Michigan's Green Chemistry Clearinghouse

Deborah Steketee, Director, Center for Sustainability, Aquinas College

Discussion:

- A recent focus for the Clearinghouse team is developing functionality for the portal. The team has an existing template of how they believe the site will work well to meet the needs of a variety of groups but they want to ensure the appropriate category place holders are in place.
- The team is finding that there is a lot of interest in the Clearinghouse thus they are looking at phasing in materials. This approach will allow them to get materials already available into the template and published well in advance of the previously proposed August 2011 publish date. In anticipation of this accelerated timeline, template review/comment may take place via email.

Action Items:

- Roundtable members will forward ideas about specific web site elements to DNRE.
- DNRE will send the Clearinghouse overview and web address to the Roundtable.
- DNRE will share the Roundtable contact list with the Clearinghouse team for use in outreach activities.

- Clearinghouse team will provide a run through of existing template categories and subcategories at the next Roundtable meeting.

9:30 a.m. – 10:15 a.m. ~ New England Green Chemistry Networking Forum
Amy Cannon, Executive Director, Beyond Benign & Jeri Weiss, Office of Assistance and Pollution Prevention, U.S. EPA New England

Discussion:

- Jeri Weiss is leading the initiative in EPA Region 1 and is looking forward to opportunities to work collectively with others on green chemistry. EPA Region 1 is fortunate to have many great leaders like Amy Cannon from Beyond Benign, John Warner from the Warner Babcock Institute for Green Chemistry, and Curt Spalding with EPA, to help with this initiative.
- The initiative kicked off last summer when EPA convened a meeting with green chemistry leaders in New England, bringing groups together that wouldn't normally have the opportunity to sit down and talk with one another. At a second meeting held in the fall the group set out to develop a Strategic Plan with a clear mission and goals.
- The mission of the New England Green Chemistry Challenge (Challenge) is to broaden the understanding and the adoption of green chemistry in select sectors throughout New England. To ensure a green, safe and sustainable economy while improving human health and protecting the environment. Through partnerships in select sectors, use green chemistry to reduce reliance on non-renewable resources, eliminate toxic products and promote the introduction of non-hazardous materials and chemicals. Expand the number of new and existing companies using green chemistry approaches and support green workforce development.
- Striving to do something transformational in the region they established seven goals for the Challenge. With the first real action being the December Networking Forum (Forum) at MIT. You may follow this group on LinkedIn by joining the "New England Green Chemistry Networking Forum" and view recent meeting resources at: <http://www.epa.gov/region1/gcforum2010/>.
- Opportunities were provided at the Forum to participate in one of six strategic groups: Policy & Regulation (Government), Production & Work (Business), Investment & Development (Venture Capital/Economic Development), Education (K-12, Colleges & Universities), Advocacy & Demand (Non-Government Organizations), and Health & Welfare (Environmental Health Organizations). Strategic groups will be the key to advancing green chemistry work for the region.
- Another effort underway is to hold regional science workshop in the spring to support the Challenge. This will provide an opportunity for the strategic groups to share developed products with a wider audience.
- Question: Is EPA considering a similar approach to green chemistry in other parts of the country? There is interest in Region 2. NEWMOA, which pulls together many of the states from Regions 1 and 2, has been very active in chemicals policy. Region 10 is coming at it from a product stewardship angle and there is some interest from Region 9 because of California's work. Region 1 is the first to have this type of forum and there is a lot of interest in how to move this forward.
- Question: Are higher education institutions participating in the Challenge? Universities are engaged at all levels from teaching and research to academics from the business school. The Education sub-group, which spans from K-12 to workforce development, has good participation from many of the 4-year colleges in the Boston area and they are beginning to see more interest from the research community.
- Question: Are chemical companies participating in the Challenge? Some of the key members in the Production & Work sub-group are from ATMI, Nypro, Inc., and Seventh Generation, Inc.
- Question: How does EPA intend to stay connected to the sub-groups? The EPA hopes good leadership will move the groups forward but in some cases sub-groups may need more leadership/support. The EPA intends to keep in contact with the strategic groups as

- they go along and will check in with co-chairs every few weeks to monitor progress.
- Question: Where is funding coming from to support the Challenge? The Forum was supported by the EPA's Office of Research and Development.
 - Question: How is green workforce development being defined? The topic is very broad; the Strategic Plan doesn't identify specific metrics. Participants realize there is a need to increase professional development around the subject of green chemistry at all levels. In some cases workforce development speaks to creating new jobs, they're trying to focus on a combination of both new jobs and existing jobs at all levels.
 - Question: Did students participate in the Forum? Both college and K-12 students participated in the Forum. Beyond Benign has a college student fellows program so many of the college students involved in the Forum were from that program. In other cases faculty members brought entire classes to participate in the Forum. Student participation brought a lot of energy and excitement to the meeting.
 - Question: Are Challenge metrics available? Not yet, metrics will be defined as projects get developed.
 - Question: Are there opportunities for Roundtable/Challenge interaction? These groups should stay connected and check in with each other every six months to share products and/or events.

Action Items:

- DNRE will forward the New England Green Chemistry Networking Strategic Plan, Forum website, and speaker contact information to the Roundtable.

10:15 a.m. – 10:30 a.m. ~ Green Chemistry Updates
Roundtable Members

Discussion:

- *SAE Green Technology Systems Group – Mike Albu & Pat Beattie*
This group is trying to bring companies, OEMs, and suppliers together to be the focal point in industry on green chemistry/green engineering. In support of this work, the SAE World Congress to be held in Detroit, April 12-14 (<http://www.sae.org/congress/>), will have a green chemistry/sustainability panel discussion on Thursday with a biobased materials workshop the next day. The Green Technology Systems Group has monthly webex meetings and Roundtable members are invited to participate. PPG Industries joined this group last year and was recently asked to provide a presentation on their award winning chitosan enhanced paint detackifier Green Logic.
- *Society of Toxicology Annual Meeting, Washington, D.C., March 6-10 – Pat Beattie*
Co-chair of event workshop on designing safer chemicals – hoping to create greater awareness between toxicologists and chemists so that they can better communicate moving forward. Recommend everyone read, *Toward a Comprehensive Molecular Design Framework for Reduced Hazard* (<http://pubs.acs.org/doi/abs/10.1021/cr9003105>).
- *GreenCentre Canada – Guy Williams*
Over the past several months a small group of Roundtable members have been meeting with Rui Resendes, Director of GreenCentre Canada (<http://www.greencentrecanada.com/>) about the pros and cons of replicating a similar center in Michigan. Currently the group is spearheading conversations around raising seed capital - \$750,000. In support of this effort the group has met with the New Economy Initiative and hopes to engage the Michigan Economic Development Corporation in future conversations.
- *Life Cycle Assessment and Product Category Rules – Gabe Wing*
In the fall, EPA Region 10 invited stakeholders to participate in a series of workshops around this topic to determine the overall impacts of products. As an output of the group they are looking for a place to house standardized instructions for product category rules as well as a repository for publishing environmental product declarations based on ISO

standards. BIFMA has established a set of product category rules for their products in order to satisfy demand for transparent life cycle data; which is one way to determine where you can most effectively apply green chemistry to a product. The EPA is also undertaking actions for alternative assessments of decaBDE.

- *HB 4817 – Andy Such*
This Bill, which incorporates the definition of green chemistry into the MEDC definition of research and development, passed at the end of December. This legislation helps to standardize the definition of green chemistry in Michigan.
- *ChemEd 2011 - Kathe Hetter*
ChemEd 2011 is scheduled to take place July 24-28, on the campus of Western Michigan University (<http://www.wmich.edu/chemed>). They are currently working with Beyond Benign to hold a green chemistry workshop before the conference and will be providing funding for twenty people from the city of Detroit to attend the workshop. This summer they hope to begin creating training video for educators.
- *Second International Congress on Sustainability Science and Engineering - Yinlun Huang*
Important to note that the conference had a Sustainability through Green Chemistry and Engineering session chaired by EPA. The session was very well attended and Michigan's Green Chemistry efforts were presented to the group.
- *Industrial Hygiene – Carrie Ziehl Brown*
The definition of green chemistry always mentions protection of the environment and human health. What role does OSHA/MIOSHA/industrial hygiene play in the green chemistry movement? As secretary of the Michigan Industrial Hygiene Society she knows that this discussion is not happening. The role of the industrial hygienist has evolved from strictly workforce protection in the 70's to driving for safer alternatives/solutions today. Several opportunities exist to connect with this group and get feedback on their possible role through either their Listserv or an upcoming technical forum.
- *Interstate Chemicals Clearing House (IC2) – Chris Affeldt*
Michigan is part this umbrella organization to promote a clean environment, healthy communities, and a vital economy through the development and use of safer chemicals and products (<http://www.newmoa.org/prevention/ic2>). The IC2 is welcoming new "IC2 Members" (state, local and tribal environmental and health agencies) as well as "IC2 Supporting Members" (non-governmental organizations, businesses, labor organizations, and academic programs).

Action Items:

- DNRE to forward SAE Green Technology Systems Group overview and World Congress conference information to the Roundtable.

10:30 a.m. – 10:45 a.m. ~ Break

10:45 a.m. – 11:00 a.m. ~ Green Chemistry Grant Updates
OPPCA, DNRE

Discussion:

- *Clean Energy Advanced Manufacturing (CEAM) in Green Chemistry – Karen Edlin*
November 5th marked the close of the Request for Proposal period for this grant opportunity. A total of four proposals were received with two projects selected for funding with Clean Michigan Initiative Green Chemistry grant money and the Department of Energy, Labor & Economic Growth's (DELEG) American Recovery and Reinvestment Act loan fund. One additional business will be provided financial assistance with DELEG's American Recovery and Reinvestment Act funds. DNRE recommendations will go before the State Administrative Board on February 1st and pending this approval we will begin

working with the companies to develop grant project workplans.

- *Great Lakes Restoration Initiative (GLRI) – Chris Affeldt*
An announcement about round two of the EPA's GLRI competitive grants is expected soon. We anticipate that green chemistry projects will still be one aspect of this solicitation; as such the DNRE is revisiting its 2010 GLRI proposal and would welcome comments and/or partners for a 2011 GLRI project proposal. Last year's GLRI proposal looked at opportunities to provide small and medium sized businesses with on-site green chemistry focused pollution prevention technical assistance. DNRE is currently talking with representatives at Western Michigan University's Green Manufacturing Initiative about potential projects but we would welcome ideas and feedback from the Roundtable.

Action Items:

- DNRE to forward CEAM Award Press Release to the Roundtable.
- DNRE to forward 2010 GLRI proposed project overview to the Roundtable.
- Roundtable to provide DNRE with feedback on possible 2011 GLRI grant project ideas.
- DNRE to set aside time at a future Roundtable meeting to discuss project ideas for future funding consideration.

11:00 a.m. – 11:15 a.m. ~ 2011 GreenUp Conference

Jennifer Acevedo, OPPCA, DNRE

Discussion:

- The first Steering Committee meeting is planned for later today; preliminary discussions have been around the University of Michigan hosting this year's conference. We are looking at a date in October most likely at the Michigan League or North Campus Research Complex.
- Agenda development is already underway; the Steering Committee would welcome input on a conference theme and potential keynote speakers.
- One suggestion provided was that Director Wyant forward a letter to all Michigan colleges/universities inviting them to this year's conference and asking that they consider future hosting opportunities.
- To circle back to an earlier discussion recognize that both Wayne State and the University of Michigan have a strong industrial hygiene focus.

Action Items:

- Roundtable to send Jennifer Acevedo conference theme, keynote and speaker ideas by February 18th.

11:15 a.m. – 11:30 a.m. ~ 2011 Governor's Awards Program

Karen Edlin, OPPCA, DNRE

Discussion:

- The Green Chemistry Program is moving forward with development of an awards program for 2011 but we really need to focus on marketing this year.

Action Items:

- DNRE to contact Roundtable members about marketing ideas/opportunities.

11:30 a.m. – 11:50 a.m. ~ The Green Screen for Safer Chemicals

Ken Zarker, Pollution Prevention Section Manager, Washington State Department of Ecology

Discussion:

- Washington State Department of Ecology (Washington) recently hosted a technical training on The Green Screen for Safer Chemicals (Green Screen) in partnership with Clean Production Action. Green Screen is a tool developed to help identify safer chemicals and is based on EPA's Design for the Environment program (www.cleanproduction.org/Greenscreen.php). Washington believes Green Screen is a good benchmark for helping companies develop and identify safer chemicals within the workforce and in manufacturing.
- The Seattle training saw about forty industry representatives participate in hands on training of Green Screen as well as provided participants an introduction to Washington's Quick Chemical Assessment Tool (QCAT). QCAT takes some of the key elements of Green Screen and pares them down to provide technical assistance providers with a quick assessment tool that they can use to assist small/medium sized businesses in conducting a hazards assessment.
- Washington has talked with Michigan's Green Chemistry Program about opportunities to host a similar training session in Detroit the week of June 6th at the National Environmental Sustainability Summit (www.environmentalsummit.org). To ensure a successful event they are interested in partnering with some of the local efforts to host the event and to help with marketing/outreach for a day long workshop.
- Question: Why use Green Screen and not some other tool? Green Screen is a very transparent tool and is a good publicly available platform for businesses to use. Because of this other states are beginning to look at this tool as well. Green Screen creates benchmarks so that a business can identify chemicals of high concern, those they want to avoid, and those they can continue to use but need to find safer alternatives for. This tool is also starting to be adopted by larger companies like Hewlett Packard and IBM. Washington believes Green Screen has a lot of potential and with more users could become a good standard.
- Question: What makes this tool unique? This tool is unique because it's based on EPA criteria and the methodology used to screen chemicals allows you to leverage resources.
- Question: Is there a certification associated with it? Right now it is an open platform with no certification however Clean Production Action is talking about recognizing certain practitioners and putting a trade mark on the Green Screen.
- Question: Is there a system where someone can access assessment results? That conversation is just getting started. It's a very manual process to go through the many chemical information resources and conduct a review. Clean Production Action is looking at ways to provide a public forum for businesses to share information. For example, Nike wants to share reformulation information which could be helpful for others.
- Question: Who would be the target audience for this type of training? A target audience might include: large manufacturing firms that are trying to identify or drive chemicals of concern out of the supply chain; firms with toxicologists/chemists/engineers that are looking for safer alternatives; and folks that work on material sourcing and/or the design side of things.
- A point was made that Herman Miller has been pursuing a chemicals strategy for ten years and that it is important to have the product manufacturers and OEM's involved but without material suppliers being there you can't pull the necessary data needed for Green Screen. As such it will be important to reach out to people that have design control of their products as well as the rest of the value chain for this type of training opportunity.

Action Items:

- DNRE to forward Roundtable information on the QCAT.

11:50 a.m. – 12:00 noon ~ Next Roundtable Meeting Discussion

Discussion:

- Following a quarterly schedule, the next Roundtable meeting will be scheduled for the

end of April, ideally the week of the 18th or 25th.

Action Items:

- DNRE to send out a notice to the Roundtable to schedule a Roundtable meeting to be held at the end of April, 2011.