

**Joint Board-Council Committee on Environmental Improvement
12-13 March 2016, San Diego, CA**

*CEI Vision Statement: A sustainable world enabled
through the sustainable practice and use of chemistry.*

*CEI Mission Statement: Advance sustainability thinking and practice
across ACS and society for the benefit of earth and its people.*

UPCOMING MEETINGS

Date	Location	Meeting Theme (Chair)
08/20/16	Philadelphia	Chemistry of the People, by the People and for the People (Rudy Baum)
04/01/17	San Francisco	Advanced Materials, Technologies, Systems and Processes (Kathryn Beers)
08/19/17	Washington D.C.	Chemistry's Impact on the Global Economy (Nancy Jackson)
03/17/18	New Orleans	Nexus of Water, Energy, and Food
08/18/18	Boston	Chemistry – from Bench to Market
03/30/19	Orlando	Chemistry for New Frontiers
08/24/19	San Diego	Chemistry of Water

ATTENDANCE (Group photo in Appendix 1)

Members, Associates, Consultants, and Liaisons:

- ***In attendance:*** Tony Noce (Chair), Ray Garant (Staff Liaison), Chris Avery (Portfolio Manager), Jerry Bell, George Cobb, Jetty Duffy-Matzner (ConC Liaison), Alan Elzerman, Jurgen Exner, Rick Fehir, Jack Fowle (Vice Chair), Elise Fox (Portfolio Manager), Helen Gerhard (Ethics Liaison), Robert Giraud, Emily Grumbling, Carol Henry, Katie Hunt (CA Liaison), John Jayne, Laura McConnell, Faye McNeill, Eileen Nottoli, Sherine Obare (Portfolio Manager), Melissa Pasquinelli (Secretary), Keith Peterman, Robin Rogers, Barclay Satterfield (Portfolio Manager), Susan Shih (SOCED Liaison), Bassam Shakhashiri, James Seiber, Jennifer Tanir, Kate Weber (Portfolio Manager)
- ***Absent:*** Marie Bourgeois, Jenny MacKellar (ACS GCI), Michael Matthews, Cathy Middlecamp, Martin Mulvihill

ACS Staff: Carl Maxwell (ACS OPA)

Guests: David Constable (ACS GCI), Despina Strong (Councilor, Puget Sound Local Section), Keisuke Ikehata (Alternate Councilor, Orange County Local Section).

APPROVAL OF THE MINUTES OF THE AUGUST 2016 MEETING

As our first order of business, the Committee voted by voice to ***certify the interim action (via email) of the approval of minutes from the 15 August 2015 meeting of the Committee in Boston, MA.***

PRESENTATION ON DEVELOPING THE ACS PUBLIC POLICY MESSAGE

Garant (as his Assistant Director for Public Policy role) gave an overview of how public policy is developed and implemented at ACS. The existing statements that we lead and/or play an active role are the following and their assigned tier for 2016 are as follows:

- TIER 1 (leadership considers adding resources): Climate Change (expiring in 2016)
- TIER 2 (high priority): Chemicals Risk/Regulation (expiring in 2016), Energy (expiring in 2018), Scientific Insight and Integrity (expiring in 2017), Sustainability (expiring in 2017)
- TIER 3 (normal): Hydraulic Fracturing (lead every 2-3 years), Water (expiring in 2018)
- TIER 4 (secondary): Biomonitoring (expiring in 2016), Endocrine Disruption (expiring in 2018), Inherently Safer Technologies (expiring in 2018)

PROJECT WORK

The committee spent two hours on Saturday afternoon working in project teams according to the following schedule:

3:45 p.m. – 4:15 p.m.	4:15 p.m. – 4:45 p.m.	4:45 p.m. – 5:15 p.m.	5:15 p.m. – 5:45 p.m.
<i>Climate statement writing team:</i> John (lead), Elise, Emily, Chris, Faye, Kate		<i>Supply chain workshop:</i> Jen (lead), Eileen, Barclay, Robert, Rick, Kate	
<i>Risk assessment and regulatory writing team:</i> Carol (lead), George, Laura, Kate, Jen		<i>GMO programming and statement:</i> Chris (lead), Jim, Emily, George	<i>Communications and social media:</i> Emily (lead), Elise, Kate
<i>Toolkits and initiatives:</i> Robin (lead), Jerry, Bassam, Alan, Eileen		<i>Advocacy fly-ins:</i> Elise (lead), Chris	<i>Local section outreach:</i> Elise (lead for Mike), Alan, Melissa, Susan, Eileen
<i>Sustainability talking points:</i> Jack (lead for Marty), Jim, Robert, Rick		<i>Industrial report:</i> Katie (lead), Jurgen, Laura, Robert, Barclay	<i>Environmental films:</i> Sherine (lead), Jim, Laura
<i>CPT guidelines:</i> Alan (lead), Susan, Melissa	<i>Regional meetings:</i> Keith (lead), Susan, Melissa, Barclay	<i>Curriculum award:</i> Sherine (lead), Susan	<i>COP student observers:</i> Keith (lead), George

MOTIONS

The Committee moved and voted by voice to ***fund the Local Section Sustainability Activity Grant Proposal from the Eastern New York Local Section.*** Tony Noce recused himself from the discussion and the vote.

The Committee moved and voted by voice to ***fund the Local Section Sustainability Activity Grant Proposal from the Northeastern Local Section.*** Tony Noce recused himself from the discussion and the vote.

The Committee moved and voted by voice to ***make two ChemLuminary awards for Sustainability, to the Midland Local Section and the Dallas-Fort Worth Local Section. (Confidential through August 24, 2016)***

The Committee moved and voted by voice to ***approve the Sustainability Talking Points as a document of the Committee.***

PROJECT REPORTS

Our current project portfolio is given in Appendix 2. Updates on particular projects are given below.

Sustainability Talking Points (Marty Mulvihill, lead; presented by Jack Fowle): Fowle presented the initial draft. McConnell pointed out that the National Academy of Science just came out with a document on communicating science with the public that the team should also take into consideration.

Local Section Outreach (Mike Matthews, lead; presented by Elise Fox): Since the Fall Meeting in Boston, Kate, Jen, and Melissa reworked the application for the Sustainability Mini-Grant program and also created a final report template for awardees; they are already posted on our website, and are also given in Appendix 3. Also, due to the lengthy discussions around the ChemLuminary award this year, it was suggested that the criteria and the write-up for the sustainability ChemLuminary be reassessed to ensure that it is representing what we intend it to and to clarify it to potential applicants.

COP21 ACS Student Team (Keith Peterman, lead): Launched as an international year of chemistry project, and is now supporting 9 students (our maximum allotments) to attend the UN Climate Change Conference. This year, there has been a lot of press around the students' attendance, including the students' tweets were highlighted on the *C&EN* website, articles in *InChemistry* magazine and C&EN News, and posts on *Buzzfeed*, Facebook, and other social media sites. Two of the students will serve on the panel after the environmental film on Tuesday, and several are presenting in a symposium on Sunday. It was suggested to develop an "Adopt a Student" opportunity so companies can help sponsor these students, and to think about partnerships to increase our student participation.

"The Debate" (Chris Avery, lead): At the Fall 2015 meeting (in Boston), climate was chosen as the topic since our policy is up for review in 2016. The session was structured similar to a political debate with panelists and a moderator, but questions from the audience were also welcome. The opinions were quite diverse, and since most were not ACS members, the sponsorship costs were significant. About 100 people attended and remained for the entire 1.5 hours, and Avery received over 30 emails afterward expressing support of the event. In the future, he wants to make sure that the policy writing team for the topic attends the debate to be informed. Suggestions include incorporating live tweeting, and extending time to allow more audience participation. He is organizing another debate around GMOs for the Fall 2016 meeting (in Philadelphia), so if interested, please contact Avery to help develop.

CPT Supplement (Alan Elzerman, lead): There is a project team actively working on developing it that involves both CEI members and external partners. It is not clear on how we can also include a resource guide.

GMO Programming (Chris Avery, lead): CEI, CA, and ComSci are working on developing some programming around GMOs; they are currently trying to cast as wide of a net as possible at this stage. At the Fall 2016 meeting in Philadelphia, programming is planned on Sunday-Tuesday: "The Debate" session, and an open call for posters. The writing team will then meet on Wednesday to scope a possible policy statement project.

Chemistry and the Environment Film Series (Sherine Obare, lead): Film series is an excellent way for CEI to get exposure, especially with undergraduate students. One of the items that is being discussed by the project team is how to better incorporate the topics from the film beyond the National Meetings. Fox suggested the Program-in-a-Box program through YCC.

Public Policy Statements:

- Kate Weber requested input on the public policy priorities (Page 6-4 of Agenda) by April 8. Page 6-9 in the agenda book also has information on how to draft a policy statement.
- Carol Henry introduced her writing group for the regulatory statement, which currently consists of: George Cobb, Jack Fowle, Laura McConnell, Jurgen Exner, and Alan Elzermann (Kate Weber and Carl Maxwell also plan to join calls as time allows). The group plans to attempt to integrate biomonitoring, endocrine disrupters, and possibly nanotechnology into this statement, and that they will remove most of its green chemistry content (but will refer to green chemistry background in a different location). Carl added that the group intends to include in the statement support for risk-based (as opposed to hazard-based) regulation.
- John Jayne introduced his writing group for the Climate statement: Emily Grumbling, Elise Fox, Faye McNeill, Chris Avery, Mark Jones (CA), and Rudy Baum (ComSci). Kate Weber and Carl Maxwell will also join these calls as time allows. The team hopes to decrease the statement's length from six to two pages.
- Chris Avery and Barclay Satterfield reported on their development of four recommendations around policy statements in which the committee members concurred; please see Strategic Plan memo in Appendix 4 for details:
 - CEI should commit to organize an annual technical session at every Spring Meeting to discuss and amplify newly updated policy statements.
 - CEI leadership should work with ACS staff to develop a regular quarterly column on policy issues in Chemical & Engineering News.
 - CEI leadership should work with ACS staff to regularly write articles in mass media outlets on committee policy issues.
 - The Committee should develop and implement a model of policy statement writing that includes programming to inform the statement before writing begins and to amplify the statement once it is finalized.

Other Future Programming: Please submit recommendations for Emerging Kavli lecture to Noce via email for Spring 2017 meeting in San Francisco. There is a nomination package that needs to be filled out for our nominees in the Agenda Book (Tab 4, Pages 4-4 to 4-7).

Other reports from project teams are provided in Appendix 5.

REPORT FROM THE OFFICE OF PUBLIC AFFAIRS

Maxwell provided a verbal summary and a written report in Tab 5 (pages 5-2 to 5-26). Specific items that were highlighted include:

- Energy: A broad energy package is still moving forward
- House Space and Science Committee versus NOAA over their temperature study published in Science last year that disputes the global warming 'pause.'
- Toxic Substances Control Act: Senate and House bills are fairly different, so congressional staff is currently working through that, will likely set up a conference to work out the details, specifically on pre-emption, whether it should be broad or narrow, and the schedule.

REPORT FROM THE ACS GREEN CHEMISTRY INSTITUTE (GCI)

David Constable provided a report on the highlights of ACS Green Chemistry Institute® (ACS GCI) activities since their last report to CEI in August 2015. Please see Tab 5 (pages 5-27 to 5-31) of the agenda materials for more details. Specific items that were highlighted include:

- The 20th Annual Green Chemistry and Engineering Conference is being held in Portland, OR, June 14 – 16, 2016. They have received a record number of abstracts for the event.
- Continuing to work on the GC&E Education Roadmap; workshop held last fall that established the vision and four key elements. A draft of the Roadmap is expected by the end of this year. You can find out more here: <http://www.acs.org/content/acs/en/greenchemistry/students-educators/education-roadmap.html>
- Lots of activities going on around the Industrial Roundtables, please see report for specifics.

Noce emphasized that he wants to us to think about other opportunities to partner with GCI so we can have a “multiplier effect” on activities.

NEW BUSINESS

(None)

ADJOURNMENT

The meeting adjourned on Sunday, 13 March 2016 at 12:02 pm.

This document completes the Minutes of the Executive Session of Joint Board-Council Committee on Environmental Improvement for 12-13 March 2016 in San Diego, CA.

Respectfully submitted,

Melissa A. Pasquinelli

Secretary

Website: <http://www.acs.org/content/acs/en/about/governance/committees/cei.html>

Appendix 1—Photos
Attendee Group Photo



Appendix 2—Current Project Portfolio

(Project teams that met during the meeting are indicated in blue.)

Project	CEI Goal	Strategy	Start Date	Completion Date	Manager	Lead
Biomonitoring Statement	0	1	1/1/2016		Weber	Cobb
Climate Statement	0	2	1/1/2016		Weber	Jayne
Regulatory Statement	0	3	1/1/2016		Weber	Henry
Water Initiative w/ ES&T	0	4	1/1/2016		Weber	Weber
Local Section Outreach	0	5	1/1/2016		Fox	Matthews
Film Series	0	6	1/1/2016		Obare	McConnell, Obare
CoP Kids	0	7	1/1/2016		Obare	Peterman
Curriculum Award	0	8	1/1/2016		Obare	Obare
GMO Programming and Statement	0	9	1/1/2016		Avery	Avery
Toolkits – Evaluation and path forward	0	10	1/1/2016		Avery	Rogers
Programming Coordination	0	11	1/1/2016		Avery	Middlecamp, Tanir, Noce, Avery
Strategic Planning – Programming	1	1	1/1/2016	7/15/2016	Avery	Matthews
Supply chain sustainability workshop	1	2	1/1/2016	3/31/2017	Satterfield	Tanir, Mulvihill
Communications	1	3	1/1/2016	8/31/2016	Fox	Grumbling
CEI-specific report on industrial activities at ACS	1	4	1/1/2016	12/31/2016	Satterfield	Hunt
Fly Ins	2	1	1/1/2016	(ongoing)	Fox	Fox
Sustainability talking points and path forward	2	2	1/1/2016	12/31/2016	Fox	Mulvihill
Policy Statement recommendations	2	3	1/1/2016	3/31/2016	Weber	Avery, Satterfield
Regional Meeting Programming	3	1	1/1/2016	10/31/2017	Satterfield	Peterman
CPT Guidelines	3	2	1/1/2016	8/31/2016	Obare	Elzerman

Appendix 3.1—Revised Sustainability Mini-Grant Application



ACS Committee on Environmental Improvement and Committee on Local Section Activities Mini-Grant Application For Sustainability Programming

The commonly accepted definition of sustainable development comes from the Brundtland Commission, which defined sustainable development as development that meets current environmental and human health, economic, and societal needs without compromising the progress and success of future generations. Sustainability addresses the major challenges of meeting society's energy needs now and in the future, feeding a growing population, and providing clean drinking water throughout the world. Chemists can have a vital role in each of these sustainability objectives.

The Committee on Environmental Improvement, in recognition of the ACS strategic plan objective to be a global leader in enlisting the world's scientific professionals to address, through chemistry, the challenges facing our world, seeks to promote opportunities to enhance the chemical community's awareness of and response to the challenges of sustainability. This mini-grant program is designed to encourage local sections to develop programming, in the broadest possible sense, that furthers the discussion of sustainability within the chemical enterprise. All avenues of programming will be considered, including (but not limited to) speakers at local section meetings, Science Café's, workshops, educational programs, community events, or other innovative programming concepts.

Please complete the following information and return to:

Ray Garant, Staff Liaison, Committee on Environmental Improvement
American Chemical Society
1155 16th St., N.W., Room H501
Washington, DC 20036
800-227-5558 x6063, r_garant@acs.org

Contact Name:

Local Section:

Phone:

Email:

1) State the goal of your sustainability programming in 1-2 sentences.

2) Who is your intended audience?

- ACS members
 Chemical/technical community
 K-12 students

American Chemical Society
1155 Sixteenth Street, N.W. Washington, D.C. 20036 www.acs.org

- General public
 Other – Please Specify

3) Brief paragraph describing the details of the programming, including potential timeline, how you plan to use the funds, and how you plan to publicize the programming (before and/or after). If you have other source(s) of funding to support the programming (if needed), please also indicate that.

4) How will your programming seek to enhance the chemical community's awareness of and response to the challenges of sustainability?

5) What can CEI do to help foster the success of this programming (such as provide mentoring, help with identifying experts, etc.)?

I am interested in undertaking sustainability programming in our Local Section. I am applying for \$500 mini-grant to support this activity. I understand that mini-grant funds can be used to support speaker travel, for advertising and promotion or to help offset other cost associated with the proposed programming. A summary report describing the event will be submitted to CEI within 30 days of the conclusion of the event using the CEI template at <http://www.acs.org/content/acs/en/about/governance/committees/cei/local-section-activities/sustainability-programming-grants.html>

Proposed date of when report will be submitted: _____

Chair's Signature: _____

Appendix 3.2—New Final Report Template for Mini-Grant Awardees



Event Report

ACS Committee on Environmental Improvement and Committee on Local Section Activities (CEI and LSAC) Mini-Grant for Sustainability Programming

Thank you for applying for a sustainability programming mini-grant! We are excited to hear about how you used the funding. To help us improve the grants program and track its impacts, please provide brief answers to the below questions. If you have photos, videos, or other materials from your event that you would like to share, please also include them when you submit this form. We appreciate your feedback!

Please complete the following information and return to:

Ray Garant, Staff Liaison, Committee on Environmental Improvement
American Chemical Society
1155 16th St., N.W., Room H501
Washington, DC 20036
800-227-5558 x6063
r_garant@acs.org

Your Name:
Local Section:
Phone:
Email:

Please provide a brief description of your event, including the date, location and title of the event.

How did you use the mini-grant funding, and how was it important for your event's success?

American Chemical Society
1155 Sixteenth Street, N.W. Washington, D.C. 20036 www.acs.org

How many people attended the event? If you collected other demographic information, please include it here.

How did you publicize your event?

- Email ACS Meeting Materials
 Online Printed Newsletter
 Social Media Other – Please Specify

Of what aspect(s) of the event are you most proud?

What would you do differently next time? If your event is ongoing, what plans do you have going forward?

How can CEI improve the application process?

Do you plan to submit this programming for a ChemLuminary award?

- Yes, for the Sustainability Award Yes, for another ChemLuminary Award No

If no, why not? For more information on the ChemLuminary program, go to <http://www.acs.org/content/acs/en/funding-and-awards/awards/community/chemluminary.html>

Other comments?

Appendix 4—Policy Statement Memo

MEMORANDUM

To: Tony Noce, Chair, CEI Strategic Planning Transition Team

From: Chris Avery, Barclay Satterfield

Date: January 20, 2016

RE: Recommendations for actions to better distribute and increase member buy-in of policy statements

At the Fall 2015 National Meeting in Boston, we were tasked with developing a plan under Goal 2, Strategy 3 of the CEI Strategic Plan. That strategy under Goal 2 (shown to the right), focuses on utilizing the policy statements CEI generates in a more effective way.

All of these proposals center on effective communication. They leverage programming and media outreach to communicate both internally to ACS membership and externally to the public and policymakers.

One of the most important conceptual pieces of these recommendations is **the expansion of the writing time frame**. Under current processes, the timeline to write or revise a policy statement is approximately 1 year (roughly 2 National Meetings & Board consideration). We are recommending incorporating information gathering before a writing team is formally seated, as well as suggesting additional programming afterward to amplify and explain the final statement. This would expand the time horizon to roughly 2 years (4 National Meetings plus Board consideration). If implemented well, this process should make the statements more useful, more informative, and better understood by ACS membership, making the time investment valuable.

There are several statements currently under development that will require either information gathering beforehand (e.g.: the GMO statement), or an intentional rollout plan after finalization (e.g.: the Climate statement). Both of these statements could benefit from the type of approach described here.

Recommendations:

1. CEI should commit to organize an annual technical session at every Spring Meeting to discuss and amplify newly updated policy statements.
2. CEI leadership should work with ACS staff to develop a regular quarterly column on policy issues in Chemical & Engineering News.
3. CEI leadership should work with ACS staff to regularly write articles in mass media outlets on committee policy issues.
4. The Committee should develop and implement a model of policy statement writing that includes programming to inform the statement before writing begins and to amplify the statement once it is finalized.

Goal 2: Equip ACS members and advocates to be influential voices about policies in sustainable chemistry via development of appropriate tools for the relevant audiences.

G2, Strategy 3: By 2016 Spring National Meeting, a working group (appointed by the CEI Chair) will provide to CEI a set of 3-5 recommendations for actions to better distribute and increase member buy-in of policy statements.

Detailed Recommendations for Action

Recommendation 1: Organize a once-yearly programming session on policy statements. In addition to technical presentations on the relevant topic, we strongly recommend leveraging non-traditional programming to enliven and explore the topics related to the policy issue. Panel discussions, invited outside-the-box speakers, and policymakers would all be ideal. We also recommend regularly scheduling this for the same meeting each year, and suggest the Spring Meeting would be the ideal choice.

Possible success metrics:

- Completion of session;
- Number of session attendees;
- Volume/diversity of attendees (possibly defined as count of attendees outside of CEI, or count of students, academic, industry);
- Amount of follow-on discussions triggered by session;
- Amount and quality of input from session participants (if seeking input, say on a new or updating statement)

Recommendation 2: We recommend CEI leadership work with Chemical & Engineering News (or another appropriate venue) to obtain a quarterly column for CEI to discuss our policy work. The Chair of CEI should be the primary author for these columns. Additional partners/co-writers can be brought in at the Chair's discretion. The purpose of these columns is to expand on the motivation behind a specific policy statement, provide details on what it says and what it means, and showcase ways the statements have influenced decision-making (where such demonstration is possible).

Possible success metrics:

- Timely publication of articles;
- Volume of articles;
- Diversity of authors & topics

Recommendation 3: We recommend CEI leadership work with the relevant CEI project manager and CEI's staff liaison to find opportunities for op-eds and articles in mass media outlets. We recommend finding opportunities for op-eds in regional newspapers or digital outlets. Articles should weigh in on an imminently, active policy issue and connect them to work ACS is doing.

Possible success metrics:

- Volume of articles,
- Diversity of authors & topics

Recommendation 4: The Chair should designate a project manager to develop and implement a model to roll out policy statements that includes engagement before writing the statement and communication about the statement's content post-approval. At minimum, the model should include: 1) programming or information gathering on the policy topic before the writing team begins writing, 2) inclusion of a writing team member charged with developing related programming, and 3) programming at National Meeting to discuss the ramifications of the policy statement. This can be timed in conjunction with Recommendation 1.

Possible success metrics:

- Success metrics connected to programming before policy statement releases (in connection with Recommendation 1);
- Influence of programming on statement development;
- Rollout plan for upcoming statement release, to be executed by the Sustainability Subcommittee

Appendix 5—Other Project Reports

National Meeting Programming (Cathy Middlecamp, Lead): Co-sponsored symposia for Fall 2016 in Philadelphia thus far include:

- (CHED) Chemistry of the People, by the People, and for the People. Organizers: Rudy Baum, MPPG Theme Leader, Irv Levy, Cathy Middlecamp
- (CHED) Citizens First! Using Real-world Context for Engaging Students in Learning Chemistry. Organizers: Matthew Fisher, Bettie Davis
- (CHED) Green Chemistry Education: By the People and for the People. Organizers: Jane Wissinger, Ed Brush
- (ENVR) Advances & Challenges in Food-Energy-Water Nexus (Cosponsor: ENFL). Organizers: Indranil Chowdhury, Yuehe Lin, Dionysios D. Dionysiou, Sorong Chae
- (ENVR) Nanotechnology for Sustainable Agriculture & Food Systems (Cosponsor: AEESP, Sustainable Nanotechnology Organization). Organizers: Navid B. Saleh, Greg V. Lowry, Phillip Demokritou, Jason C. White,
- (ENVR) Elements Old & New: Discoveries, Developments, Challenges, & Environmental Implications (Cosponsor: HIST; Committee on Nomenclature). Organizers: Tracy Williamson, Mark Benvenuto
- (ENVR) Innovative Materials & Technologies for Environmental Sustainability (Cosponsor: ENFL). Organizers: Wen Zhang, Qilin Li, John C. Crittenden
- (ENVR) Water Purification Systems. Organizer: Sut Ahuja
- (I&EC) Advances in Green Chemistry. Organizer: Michael Kopach.
- (I&EC) Green Chemistry Innovations & Opportunities in Industry for Young Professionals. Organizer: Wasiu Lawal
- (POLY) Functional Renewable Polymers. Organizers: Erik Hagberg, Tatsuo Kaneko, Robert Mathers

Supply Chain Workshop (Jen Tanir, Lead): The team discussed the meaning of sustainable chemistry in the context of the supply chain, so they can define the scope of the workshop and what CEI can realistically do to impact the issue. They came up with a list of specific potential partners, case studies, gaps/drivers, and concerns about sharing information across the supply chain. More specific details are given in Appendix 6.

Regional Meetings (Keith Peterman, Lead): The regional meetings project met for a 30-minute informal session from 4:15-4:45 pm on Saturday, March 12, 2017. We were not able to identify potential regional meeting symposium organizers nor Team Leaders to seek symposium organizers for regional meetings. We concluded that the best option to achieve the new regional meeting symposia strategy is to leverage the ACS CEI and LSAC Mini-Grant for Local Section Activities. The grant application states, “All avenues of programming will be considered, including (but not limited to)...”. This suggests that a local section which is hosting a regional meeting can apply for a mini-grant to support a sustainability-focused symposium. Susan Shih and Barclay Satterfield agreed to serve as ‘Team Leads’ and contact Regional Meeting Program Chairs to promote the mini-grant as a funding source for a regional meeting sustainability-focused symposium. Susan will contact the Programming Chair for the GLRM Regional Meeting which will be held in Fargo, ND from June 27-30, 2017. Barclay will contact the Programming Chair for the CERM Regional Meeting which will be held in Detroit, MI from June 7-9, 2017. Barclay agreed to also contact other Regional Meeting Chairs to promote the mini-grant award. An outcome of two regional symposia organized under the mini-grant program would achieve the strategy.

Integrating Sustainability into the Chemical Enterprise (ISCE) (Katie Hunt, Lead): See minutes in Appendix 6 of meetings held in San Diego on this topic, but a quick summary is the following:

Moving forward, it's time to partner with industry to integrate (operative word: INTEGRATE) sustainability into the Chemical Enterprise. We will start by visioning the desired future state...A future where **WE** (_____) would be an indispensable sustainability/environmental science, toxicology, regulatory partner to industry. Then we will come back to the present and determine what it will take to get there. In rapid succession we will:

- 1) Capture current list of sustainability activities with ACS and our respective companies
- 2) Determine our SWOTs: strengths and weakness, opportunities and threats,
- 3) Engage partners, articulate needs/expectations and identify programs and resources to fill those needs, and finally,
- 4) Formulate a path forward for discussion at the August ACS meeting in Philadelphia.

Appendix 6—Other Project Team Minutes

Summary of Workshop Working Group Discussion during CEI Meeting March 12, 2016

Discussion of Goal 1: Strategy 2: By Spring 2017 in cooperation with GCI and other partners, CEI will organize a select invitation workshop to focus on supply-chain integration of the practice and use of sustainable chemistry and an associated report for wide release.

Participants: Jennifer Tanir (lead and note-taker), David Constable, Rick Fehir, Robert Giraud, Carol Henry, Eileen Nottoli, Barclay Satterfield, and Kate Weber (and Helen Gerhard was unable to stay for the discussion session but expressed interest).

Topics Discussed:

- Meaning of sustainable chemistry and supply chain: we need further discussion about the meaning of supply-chain integration of sustainable chemistry. We need to define the scope of the workshop and what CEI can realistically do to impact this issue.
- Location of supply chain:
 - A lot of the chemistries and supply chain issues we are worried about are in different parts of the world, particularly in China and India and other developing countries. Supply chains are often in other parts of the world, not in the US.
- Specific groups we could interact with:
 - The Sustainable Apparel Coalition is a group we could talk to.
 - We could partner/interact with India and China chemical societies.
 - Strategic Approach to International Chemicals Management (SAICM) is a possibility (a program of UNEP). ACS could partner with SAICM; ACC and non-profits are already involved. A workshop could be a side event to one of their meetings.
 - The Green Chemistry in Commerce Council (GC3) is active in supply chain issues. Their next meeting is May 24-26 in Burlington, VT (hosted by Seventh Generation).
- Case studies:
 - We can use case studies in a workshop to demonstrate integration of sustainability into the supply chain and how it has been done successfully and with economically favorable results.
 - Potential examples: Walmart, Hewlett Packard, Nike, Procter and Gamble (Coldwater Tide example, addresses LCA), GM/Chrysler (ISO14000 compliance by suppliers), PGCCA winners.
 - A concern is that one sector won't want to learn from another sector or won't see the applicability to their sector.
 - Look at the biggest volume chemical streams – plastics.
- Gaps/Drivers:
 - We could explore the major gaps and drivers for supply chain integration of sustainability.
 - Driver: Policies/enforcement: It is very challenging to influence suppliers that are several tiers removed and/or that are in countries that have weaker environmental policies or policies that are not enforced. Policy only works if it is enforced. Influencing how products are made in China and India is very difficult, and this may be out of the scope of what a CEI workshop can impact.
 - Driver: Economic/saving money: There are many case studies and examples of green chemistry/sustainable chemistry saving money. There are also examples of market incentives that have worked. We can highlight the economic benefits if integrating

sustainable chemistry into the supply chain. This can be a very important driver for developing countries and around the world.

- Sharing information along supply chain:
 - Confidential disclosure agreements can be used to share info between nodes in supply chain. Information flow along the supply chain is key. GC3 members have agreed to a set of principles. We could feature the GC3 principles and share it with new audiences, such as SAICM.

Next Steps:

- Jennifer Tanir will organize regular conference calls to continue defining the scope of the workshop and to move forward into the workshop planning stage.

Integrating Sustainability into the Chemical Enterprise (ISCE)

Industry Discussion at CEI (Saturday) and CA (Monday)

March 12-14, 2016 (San Diego, CA)

Background:

- Observation at CEI strategy review: CEI is under-serving its ACS industry members. Per Jurgen Exner, ENVR came to a similar conclusion at their strategic review.
- Per Laura McConnell, AGRO has strong industry engagement from program planning to participation and sponsorship. AGRO strategically moved to programming at a single national meeting, choosing the fall meeting. We'd like to learn from AGRO.
- Our CA champion is Diane Grob Schmidt, new chair, and Immediate Past President of ACS. This effort fits with the goals of the CA Member Value Subcommittee, which is chaired by Mark Jones, Dow Chemical.

Team Members (work affiliation and ACS committee/division):

Katie Hunt (Dow retired; CA/CEI, Team Lead), Anne DeMasi (Chemtura, CA), Jurgen Exner (JHE Technology Systems, Inc; CEI/ENVR), Robert Giraud (Chemours; CEI), Laura McConnell (Bayer Crop Science, CEI/AGRO), Bevin Parks (Afton Chemical, CA/WCC), Eric Peterson (Idaho National Lab, CA), and Barclay Satterfield (Eastman, CEI, Portfolio Manager). Staff Support: Ann Lee-Jeffs, GCI working with CA.

If I did not capture your name/interest, please contact me at: catherinehunt@verizon.net !

Abbreviations

AGRO = Division of Agrochemicals, CA = Committee on Corporation Associates, CEI = Committee on Environmental Improvement, ENVR = Environmental Chemistry Division, GCI = Green Chemistry Institute. For this document: “*sustainability*” will encompass sustainability, environmental science, toxicology, and regulatory activities,

EUREKA Moment during CEI meeting...

Robert Giraud, Chemours, shared that the **ACS GCI Industrial Roundtables were awarded a NIST Grant** for \$500,000. This collaboration included AIChE. Learn more about the AltSep sustainability project.

Goal, Deliverables, Timing, and Proposed Process

Goal: to identify projects, programs, and/or activities (new or existing) to meet industry member needs specifically related to integrating *sustainability* into the chemical enterprise.

Partners: CA, CEI, ENVR (potential: AGRO, BMGT, ENFL, I&EC, PMSE, and AGRO).

ACTION ITEMS (by April 15th):

1. **Set up** team conference calls --- **Katie to work with Ann Lee-Jeffs** (and the team).
2. **Write** a summary of AGRO best practices with industry -- **Laura McConnell**.
3. **Write** a short summary of your organization's existing "ACS sustainability activities". **ALL Team members**.
4. **For extra credit, be sure to capture a WISH LIST** of ACS sustainability programs or resources you wish existed. **All Team Members**
5. **Summary of GCI's sustainability relevant programs/resources** – **Ann Lee Jeffs and David Constable** (Please include RT's, LCA and Design brochure/resources).
6. **Summary of Memberships' sustainability activities, programs and resources** – **David Harwell et al.**

Deliverables:

- Phase I: 3 (or more) ideas for discussion at ACS meeting in Philadelphia (August 2016)
- Phase II: Integrate 'winning' ideas into strategic plans for 2017 (*or earlier if timing permits*).

Process will be to bucket ideas by ACS areas of specific strength/competency:

- advocacy/public policy - policy statements, Science and Congress Briefings,
- leadership training,
- convening meetings and/or roundtables, esp. ACS GCI Chemical Manufacturer's Roundtable
- journals (i.e., special topic issues...),
- education,
- outreach,
- programming
- what else?

Note: we are not looking to: a) create non-strategic work and/or b) duplicate efforts (so GCI RT's are listed below) - all feedback welcome. It's important that we get this right!!

ENVR (Team Lead: Jurgen Exner)

The ACS Division of Environmental Chemistry (ENVR) strategic objectives include increasing involvement in its activities by industrial members of ACS. Current industrial membership in the Division comes from:

- Independent analytical contract laboratories
- Large and small chemical companies,
- Large petrochemical companies
- Pharmaceutical companies
- Consulting engineering and construction companies

Within these organizations, diverse professionals operate in disciplines ranging from laboratory functions, R&D and product development, environmental restoration, support of environmental regulatory and health issues in the US and abroad, and competitive reaction to global policies such as climate change or international regulatory concepts.

Draft Questions for industrial members...

- What is the current status in most industrial organizations of scientists/professionals in:
 - Environmental R&D,
 - Toxicology,
 - Sustainability/sustainable technologies,

- Regulatory compliance, and/or
- Other related R&D areas?
- What do we have to offer to attract these professionals and how do we convince them and their management to support the time and cost of participating in/with:
 - Technical Divisions (ENVR, AGRO)?
 - Committees (CEI, CA)?

Incentives

Academic researchers have an incentive to publish and organize technical sessions for their academic career path and their stature in the academic community.

- Is this true for industrial researchers? Are industrial researchers required and/or rewarded for presenting papers? And if so, who (what levels? Job types? Fellows?)
- Would a monetary award and/or public recognition award for industry members presenting scientific papers? And/or organizing symposium be a valuable/valued incentive?
- Is networking with personnel in scientific disciplines a useful incentive?
- Does this differ by company? by technology area? i.e., Biotech, EMaterials, Nanomaterials?

Obstacles and/or Barriers

- What are the obstacles to involvement in the Division? The Committee?
- Are leadership opportunities or ACS training relevant to industrial members?
- What are the obstacles to organizing and presenting technical papers?

National Meetings and Memberships

- What are the obstacles to attending national meetings?
- Do you have to present a paper to attend a meeting?
- Do scientists have to choose one meeting to attend? and/or one organization to belong to?

Regional Meetings

- Is it easier for industrial members to attend regional meetings? If so, should the Division increase its regional activities?

In Closing.....Moving Forward:

Moving forward, it's time to partner with industry to integrate (operative word: INTEGRATE) sustainability into the Chemical Enterprise.

We will start by visioning the desired future state...A future where **WE** (_____) would be an indispensable sustainability/environmental science, toxicology, regulatory partner to industry.

Then we will come back to the present and determine what it will take to get there.

In rapid succession we will:

- 5) Capture current list of sustainability activities with ACS and our respective companies
- 6) Determine our SWOTs: strengths and weakness, opportunities and threats,
- 7) Engage partners, articulate needs/expectations and identify programs and resources to fill those needs, and finally,
- 8) Formulate a path forward for discussion at the August ACS meeting in Philadelphia.

More resources available on the web....

ACS GCI – Green Chemistry Institute Website: Industry & Business

- Business Case Studies
- Industrial Roundtables