

Joint Board-Council Committee on Environmental Improvement 1-2 April 2017, San Francisco, CA

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

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

Website:

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

Blog:

<https://communities.acs.org/groups/cei>

Social Media Links:

Twitter: @ACS_CEI

LinkedIn group: ACS CEI

Facebook: <http://www.facebook.com/ACSCEI>

UPCOMING MEETINGS

Date	Location	Meeting Theme (Chair)
Fall 2017, Aug. 19-20	Washington D.C.	Chemistry's Impact on the Global Economy (Nancy Jackson)
Spr. 2018, Mar. 17-18	New Orleans	Food, Energy, and Water Nexus (Jerry Schnoor)
Fall 2018, Aug. 18-19	Boston	Nanotechnology (Paul Weiss)
Spr. 2019, Mar. 30-31	Orlando	Chemistry for New Frontiers (TBD)
Fall 2019, Aug. 24-25	San Diego	Chemistry of Water (Elise Fox and Chris Avery, with CEI)
Spr. 2020, Mar. 21-22	Philadelphia	Macromolecular Chemistry: The Second Century (Tim Lodge and Kris Matyjaszewski)
Fall 2020, Aug. 22-23	San Francisco	Chemistry from Bench to Market (Judy Giordan)

The full tentative schedule of ACS National Meetings is available at the following website:

<https://www.acs.org/content/acs/en/meetings/nationalmeetings/meetings.html>

ATTENDANCE (Group photo in Appendix 1)

Members, Associates, Consultants, and Liaisons:

- ***In attendance:*** Tony Noce (Chair), Ray Garant (Staff Liaison), Katherine Aubrecht, Chris Avery (Portfolio Manager), Jerry Bell, Marie Bourgeois, George Cobb, Jetty Duffy-Matzner (ConC Liaison), Jurgen Exner, Rick Fehir, Jack Fowle, Elise Fox (Portfolio Manager), Emily Grumbling, Carol Henry, Keisuke Ikehata, John Jayne, Michael Matthews, Laura McConnell, Faye McNeill, Cathy Middlecamp, Eileen Nottoli, Sherine Obare (Portfolio Manager), Melissa Pasquinelli (Secretary), Keith Peterman, Barclay Satterfield (Portfolio Manager), Susan Shih (SOCED Liaison), Jennifer Tanir, Jane Wissinger
- ***Excused:*** Robert Giraud, Katie Hunt, Robin Rogers, Kate Weber (Portfolio Manager)

ACS Staff: David Constable (ACS GCI), Jennifer MacKellar (ACS GCI), Carl Maxwell (ACS OPA)

Guests: Ed Brush, Terri Quinn Gray

APPROVAL OF THE MINUTES OF THE AUGUST 2016 MEETING

As our first order of business, the Committee voted by voice to *certify the interim actions approving the minutes of the 20-21 August 2016 meeting of the Committee in Philadelphia, PA.*

MOTIONS

- The Committee voted by voice to approve *the seven Fact Sheet drafts included in the Agenda Book as potential committee documents related to the recently updated regulatory policy statement.*
- The Committee voted by voice to *fund the Local Section Sustainability Activity Grant Proposal from the Red River Valley Local Section.*
- The Committee voted by voice to *recognize the following local sections as finalists for the ChemLuminary Award for Outstanding Sustainability Activities: Lehigh Valley, East Central Illinois, and Northeastern.* (Two abstentions: Tony Noce and Chris Avery.)
- The Committee voted by voice to *give the ChemLuminary Award for Outstanding Sustainability Activities to the **Northeastern Local Section.*** (One abstention: Tony Noce.)

PROJECT WORK

The committee spent some time on Saturday afternoon and Sunday morning working in project teams according to the following schedule:

Saturday, April 1	Sunday, April 2
2:45 p.m. – 3:45 p.m.	9:15 a.m. – 10:00 a.m.
Local Section Engagement (Mike Matthews)	Supply Chain Sustainability Workshop (Jennifer Tanir)
CPT Guidelines (Jennifer MacKellar)	Programming (Chris Avery, Mike Matthews)
Communications (Emily Grumbling/Faye McNeill)	
Policy Statements (Jurgen Exner)	
“Blue Sky” team (Jack Fowle)	

EXECUTIVE SESSION ON GOAL 1 (Saturday 4:00 – 5:00 pm)

Supply chain workshop: team has had a series of conference calls and discussions during the San Francisco meeting. Plan is as follows:

- Hold in conjunction with the GC&E conference in June 2018 in Portland; half-day or day workshop.
- Invited participants and speakers, but will be open to all conference participants.
- Deliverable: at least one peer-reviewed journal article, potentially a series, and follow-up CEI programming.
- Topics: Communications along the supply chain, success stories, drivers, measures of success, education, opportunities and collaboration, challenges and barriers, incentives/big thinking.

EXECUTIVE SESSION ON GOAL 2 (Sunday 10:00 – 10:45 am)

Discussion on GMOs (*Goal 2 Strategy 7*):

- What makes sense for CEI to do on this topic? Are there new projects that we should start based on these recommendations?
 - #2 and #5 were recommended to be the focal areas. Carol Henry has offered to spearhead that effort.
- Fact sheets around synthetic biology is something that CEI should recommend and be a part of the development, in partnership with others.
- Should we not only focus on risk management and technology safety but also the opportunities and new technologies that can be afforded?
- There are challenges around how GMOs are even defined, thus making writing a policy statement difficult. There was not consensus on this topic on the task force.
- There are other committees looking at this topic too (CA, ComSci), so we should continue the communications with them.
- Chris Avery plans to write up a summary of his experience around this issue and the work with the programming and task force, for future reference.

Discussion on Fact Sheets

- Seven Fact Sheets were developed with information related to the updated chemical risk assessment and regulatory decision-making statement, which will be documents of CEI. These fact sheets are a new mechanism to supplement policy statements: Biomonitoring, Chemical Alternatives, Designing Safer Alternatives, Endocrine Disruption, Exposure Science, Nanotechnologies, Risk Assessment.
- Also wrote an FAQ document on what the purpose of the fact sheets are, and how things like references and such were chosen, etc.
- Team: George, Jen, Jack, Jurgen, Laura, Marie, and also representatives from ComSci and CA. Work consisted of weekly calls with frequent assignments to complete.
- Is the intent to review/revise on occasion? Yes, as we see fit, since they are the documents of the committee.
- Does ACS edit Wikipedia? Could that be an opportunity for getting ‘fact sheets’ in front of the public?
- We need an outreach plan to get this information out – integrate over social media and other places where people outside of ACS will find it.
 - A discussion at the CEI Open Meeting in D.C. is planned.

Path forward on climate toolkit (*Goal 2 Strategy 8*):

- Note that the toolkits on food, water, and energy were chosen by the team to not be CEI projects.
- How we can support it in a way to make it more useable?
- Who is the intended audience? It was written for people who already have some science coursework at the undergraduate level, but there is content directly geared toward high school teachers on how it could be used in the classroom.
- Faye McNeill has offered to champion the climate toolkit and its path forward; she will provide a project plan in the D.C. meeting.
 - Jen Tanir reminded that there was a team who evaluated it a few years ago and gave recommendations on what its utility could be, which can be a great starting point.
- We could use content in the toolkits to do “Did you know” posts on social media.
- NIPCC reports were sent out to 200,000 K-12 teachers with Heartland Institute funding, so maybe lesson plans could be developed for K-12 teachers; however, rather than develop lesson

plans from scratch, it would be appropriate to direct readers of the climate toolkit who are teachers to CLEAN (Climate Literacy and Energy Awareness Network, <https://cleanet.org/index.html>), which maintains a collection of peer-reviewed educational resources.

OTHER PROJECT REPORTS

Our current project portfolio is given in *Tab 3, page 3-13 and 3-14*. There has been a lot of activity on most projects since the Fall 2016 Meeting. Updates on particular projects are given below, and other project items such as minutes or slides are given in *Appendix 2*.

GOAL 1: Engage key researchers, industry decision makers, and consumers to incorporate sustainability into their practice and use of chemistry.			
Strategy		Lead	Report
1	Programming strategic planning	Matthews	(No report.)
2	Supply chain sustainability workshop	Tanir	(See Executive Session discussion above.)
3	Communications	McNeill	The team has set up infrastructure for social media efforts using Google drive. Blog set up in ACS Network, and automatically posts to Twitter, Facebook, and LinkedIn. Need more support for generating new content to be posted. We also need to consider where else we can post articles, such as the GCI newsletter. They would like to have regular blog posts and need volunteers to do those; if interested, please contact Faye or Emily.
4	PISCES (industrial activities)	Hunt	All of the data and input is there, now just need to generate new content.
5	Film series	McConnell, Obare	Film will be held Tuesday at noon, movie called Switch which is about energy, and will also be a panel afterward comprised of the COP kids and faculty members. They are looking for a new film for next Spring and got several suggestions from members; biomimicry, sustainability TED talks, PBS special on Hanford Nuclear Site, Seasons (climate change).

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.			
Strategy		Lead	Update
1	Government Relations (was fly-ins)	Fox	Renamed this strategy to be more encompassing. Since next fall's ACS meeting is in Washington D.C., CEI should keep that in mind to leverage that to organize some

			outside roundtables focused around legislation to help provide subject matter experts.
2	Sustainability messaging	Fowle	This content will be integrated into the Fly-In Project.
3	Policy statement management	Avery, Satterfield	The recommendations from this committee are as follows, which was voted on by CEI to be adopted: 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.
4	Biomonitoring statement	Cobb	Statement is being sunsetted. <i>See discussion of Fact Sheets during the Executive Session above.</i>
5	Climate change statement	Jayne	<i>(No report.)</i>
6	Regulatory statement	Henry (presented by Cobb)	This statement and its associated fact sheets will be featured in a town hall discussion at the Committee's Open Meeting/Breakfast at the fall national meeting in Washington, D.C.
7	GMO programming and statement	Avery	Recommendations from this team on path forward: 1. The Society should consider how to engage productively on the issue of governance of science and technology in the face of uncertainty and risk. 2. Expertise in the chemical enterprise in evaluating risk management and technology safety should be leveraged to synthetic biology, with the Society supporting such efforts. 3. The Society should consider how to work productively on public education regarding the science of synthetic biology. 4. The Society should partner with other organizations already engaged in the GMO or synthetic biology debate. 5. The Society should commission several factsheets on synthetic biology. 6. Issues connected to GMOs and synthetic biology should be incorporated into existing Society policy statements. 7. Programming at National Meetings should be used as often as appropriately possible to inform and amplify policy statements.

			<i>Discussion was held in Executive Session; see notes above.</i>
8	Toolkits – evaluation and path forward	Rogers	The Project Team recommended that CEI should not pursue continued involvement with any of the toolkits as they are currently constructed and managed. While we are recommending that the current Climate Change toolkit to not end, we hope that CEI can find a new way to be proactive on the issue of climate disruption. <i>Discussion was held in Executive Session; see notes above.</i>
9	Water initiative with ES&T	Weber	This project is being morphed into water initiatives around water, with a focus on Fall 2019 San Diego.
10	Scientific Integrity policy statement	Grumbling	The statement will be sent out after the meeting; please provide feedback directly to Emily.
11	Sustainability policy statement	Girard	The writing team is drafting an updated statement for consideration by committees at the fall national meeting.

GOAL 3: Engage networks of chemists and citizens to advance sustainability education and communication.			
Strategy		Lead	Update
1	Regional meeting programming	TBD	Regional programming is being supported this year through the sustainability LSAC grants.
2	CPT guidelines	MacKellar	Team is building a document on how to build green chemistry in the curriculum. Currently working to merge three documents; plan to have something for the committee to review for the August D.C. meeting.
3	COP kids	Peterman	The program is now in the 8th year; have students from across the country participating. Please refer to update slides given in <i>Appendix 2</i> .
4	Curriculum award	Obare	The symposium will be held on April 3. There are 5 winners this year, and two keynote speakers.
5	Local section outreach	Matthews	ChemLuminary award nomination form has a few small tweaks that were discussed. There were 5 LSAC grants and 5 ChemLuminary applications submitted, and winners were chosen (<i>see Motions above</i>).

REPORT FROM EXTERNAL AFFAIRS AND COMMUNICATIONS

Maxwell provided a verbal summary and a written report in *Tab 5 (pages 5-2 to 5-24)*. Specific items that were highlighted include (slides also given in *Appendix 3*):

- Rumors versus Fact:
 - Climate websites pulled down: science delegations were reduced
 - Databases were erased: ‘climate’ removed from some websites

- Scientists told not to speak publicly: Dark Twitter feeds immediately after inauguration
- Climate offices closed: virtually empty government, due to transition (so normal).
- House Science, Space, and Technology (SST) Committee
 - Green 20 investigation (around Exxon-Mobil) stand-off, means subpoenas could be enforced (in theory)
 - Thomas Karl investigation has renewed interest from SST, so NOAA delivered documents regarding it on Feb. 28
 - Climate Hearing last week was a circus
 - New version of Secret Science Reform Act (now called the HONEST Act)
 - New version of Scientific Advisory Board (SAB) reform: restricts who can be on it, based on receiving funding, also requiring response on every public comment.
 - House Democrats introduce Holdren Integrity Legislation: ACS has not taken a position on it yet.
- Proposed budget:
 - DOE cut 5.6%: in DOE science, energy research, and elimination of ARPA-E
 - EPA cut 31%
 - Commerce cuts from NOAA grants and programs
 - NASA cuts earth science research
- EPA
 - Executive order to Repeal Clean Power Plan
 - Administrator Pruitt questions role of CO₂ in Global Warming; bar investigation into his use of private emails
 - Lorsban (chloropyrifos) ban proposed in 2015 is halted for more study
 - Social Cost of Carbon in regulations has been eliminated
- Highlights
 - Sustainable Chemistry renewed @ NSF
 - Chemistry Caucus: 29 members, focus of legislative summit
 - TSCA implementation continues at EPA
 - Successful Climate Science Day: included 20+ members of the Climate Solutions Caucus

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 March 2016. Please see **Tab 5 (pages 5-26 to 5-31)** of the agenda materials for more details. Specific items that were highlighted include (slides also given in *Appendix 3*):

- Conference in Reston VA in June; symposia submission is up, as is abstract submission. New topics include circular economy, fluorine chemistry, bringing greener products to market. Also revamped student and postdoctoral scholar workshops.
 - Partnering with ACS Sustainable Chemistry and Engineering Journal
 - CEI members and affiliates have organized symposia
- Next year's conference will be in Portland OR, theme is 'Use;' they are looking for program chairs now. The 2019 conference will be in Reston VA and theme will be 'Closing the Loop.'
- Getting very high quality contributions in the Nexus newsletter.
- Have some educational webinars coming up focused on cosmetic chemistry and sustainability challenges.
- Strong social media following and impact.
- Pharmaceutical Roundtable: 2 day conference in India, highlighted business value associated across the supply chain.

- Ignition Grants: kick-start research funding for sustainable solutions to chemistry and engineering problems relevant to the pharma industry.
- Laying groundwork to expand web presence of roundtable tools.
- Highly recommend checking out the reagents tool: <http://www.reagentguides.com/>
- Biochemical Technology Leadership Roundtable meeting being held in May.
- Hydraulic Fracturing is a refreshed roundtable, looking for a second co-chair.
- Chemical Manufacturing: Alternative Separations project continues; had successful workshop on separations in February. Also one around biomass.
- Formulator's Roundtable is stalled a bit, down to eight companies and looking for second co-chair.
- Core competencies was reworked, based on the feedback from the community; written in the language of chemists and aligned with the current chemistry curriculum.
- Partnering with other ACS educational initiatives to create pull and support integrated green chemistry into the chemistry curriculum:
 - ACS Exams Institute: systems thinking will be added as an 11th Big Idea in the content maps; far reaching impact for integrating green chemistry into the curriculum.
 - Committee on Professional Training: Supplement
- Road ahead: Finalize the first draft of the roadmap and seek feedback
 - Community wants toxicology, reaction efficiency, and systems thinking/LC thinking.
 - Plan to have expert workshop(s) to produce targeted educational resources needed to launch the roadmap.

COMMITTEE ON COMMITTEES (ConC) REPORT

Slides are given in Appendix 4. A summary is given below.

- Yellow Book: Online directory of ACS volunteers and leaders, <http://www.yellowbook.acs.org>. If you need assistance, email secretary@acs.org.
- Committee Preference Forms: Councilors, committee members, and other members interested in volunteering should fill this form out annually. Add rationale about why you are interested in a committee. It is a 2:1 ratio of people who request to be on a committee, and those who get selected.
- Committee Demographic Survey: to provide an education to broaden ACS member awareness, and provide the ACS a snapshot of committee demographics. There was a 76% participation rate overall; 67% from CEI (20/30). Complete statistics given in *Appendix 4*.
- Task Force on Governance Design:
 - Purpose: Engage stakeholders in identifying opportunities and issues for governance improvement; design a next generation governance model, develop the case for effective change, communicate with stakeholders to incorporate their feedback, and provide a model and implementation road map to the Board and Council.
 - Members: ACS Board of Directors, Council Policy Committee, Younger Chemists Committee, Committee on Nomination and Elections, Committee on Committees, Committee on Constitution and Bylaws, Corporation Associates, and Diversity and Inclusion Advisory Board.
 - Why? Ensure flexibility in governance, create an agile society, retain and build upon work and expertise, and be competitive and continue to grow the ACS.
 - Email: governancedesign@acs.org
Group on ACS Network: www.acs.org/govdesign

NEW BUSINESS

- Jack Fowle is requesting feedback on Science and Technology in the Budget;
- Mike Matthews mentioned about the new Manufacturing Institute called RAPID (rapid advancement in process intensification deployment) which is focused on improving the efficiency in the chemical industry. AIChE is leading the institute, and ACS Green Chemistry Institute Chemical Manufacturers Roundtable is also involved.
- Ed Brush from Bridgewater State University proposed a partnership opportunity on **Connecting Green Chemistry with Social & Environmental Justice:**
 - The vision statement of the American Chemical Society reads, “Improving people’s lives through the transforming power of chemistry.” Chemistry has provided numerous contributions to humanity, however we also need to be aware of the unintended consequences of chemicals on human and environmental health. Hazardous chemicals are disproportionately impacting children and adults in low income, minority neighborhoods, while the presence of naturally-occurring and human made chemicals restrict access to clean air and water. As chemists, we must be aware of the impacts that chemicals and chemical products have on society. This is best accomplished through the lens of social and environmental justice, where all people, regardless of race or socio-economic status, have the right to live, work, play and learn in healthy, safe environments. New technologies that follow green chemistry principles have made significant contributions to cleaner air and water, and the safer design and use of chemicals and chemical products. It is implicit that green chemistry = social & environmental justice, with the potential to offer solutions to help correct many of these disparities.
 - He is looking to work with the CEI to take advantage of our expertise, to study how these issues are connected to the ACS mission and vision, discuss how these topics might fit in the chemistry curriculum, and establish future directions for this discussion.
 - He and Jane Wissinger have organized a session on social and environmental justice at 1:30 pm on Sunday afternoon as part of the “Green Chemistry Theory & Practice” symposium (Salon 6 - San Francisco Marriott Marquis). Grace Lasker (University of Washington Bothell) and he has organized a symposium on this topic at the Green Chemistry & Engineering Conference in Reston, VA, June 13-15.
 - If anyone would like to contribute their thoughts, there is a short Google survey at: <http://tinyurl.com/zqdblug>.
 - Elise Fox, Melissa Pasquinelli, and Carol Henry expressed interest in discussing further. This topic is also an excellent one for keeping our younger members engaged.

ADJOURNMENT

The meeting adjourned on Sunday, 2 April 2017 at 11:56 a.m.

This document completes the Minutes of the Executive Session of Joint Board-Council Committee on Environmental Improvement for 1-2 April 2017 in San Francisco, CA.

Respectfully submitted,
Melissa A. Pasquinelli
Secretary

Appendix 1—Photos



Appendix 2—Other Project Team Minutes and Presentations

Goal 3 Strategy 3: COP Kids

<p>COP Kids: ACS-CEI Climate Literacy Project</p> 	<p>Seed planted at 2010 Spring ACS Meeting in San Francisco</p> 
 <p>American Chemical Society Climate Change Public Policy Statement</p> <p><i>"Promote climate science literacy and education..."</i></p>  <p>ACS Student Ambassadors</p> <ul style="list-style-type: none"> • UN as a global platform • Social media as a tool 	<p>Project History </p> <ul style="list-style-type: none"> • COP16 Cancun, Mexico – 2 students • COP17 Durban, South Africa – 5 students • COP18 Doha, Qatar – 5 students • COP19 Warsaw, Poland – 7 students • COP20 Lima, Peru - 9 Students • COP21 Paris, France – 9 Students • COP 22 Marrakech, Morocco – 7 students
<p>Mission Statement</p> <p><i>Using the power of education and the highest decision making authority on climate change within the UN to engage youth in the climate change discourse for the benefit of earth and its people.</i></p> 	<p>COP21: Paris Agreement</p>  <p>COP22: Shadow of the US election.</p> 

Forthcoming book
ACS Symposium Series

***Climate Change Literacy and Education:
 ACS Student Perspectives
 from the Global Stage***

- 19 Chapters
- 16 Chapters authored by COP Kids
- In final stages of production
 - On line in 6 weeks
 - Oxford University print version in 6 months

From the editor: "...congratulations on finishing an excellent title!"

SYMPOSIUM

***Perspectives on Climate Change
 Literacy & Education:
 Local to International***

**Marriott Marquis
 Nob Hill B
 Tuesday, 8:30 am - 12:10 pm**

**Expand Opportunity
 to broader demographic**

- Minority students
- 2YC3: Community Colleges
- \$\$: Funding is an obstacle



ACS Student Ambassadors
 Morocco

**COP23: Bonn, Germany
 November 7-18, 2017**



Apply:
<http://faculty.ycp.edu/~gfoy/COP23App.htm>

**Become an ACS Student Representative to the
 United Nations Climate Change Conference in Bonn, Germany
 November 6 – 17, 2017**

What is the UN Climate Change Conference?

This conference is formally called the United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP). The UNFCCC was created at the 1992 "Earth Summit" in Rio de Janeiro, with the ultimate aim of "preventing dangerous human interference with the climate system." The annual COP serves as the "supreme body" of the Convention with the "highest decision-making authority."



What is the purpose of this project?

The purpose of this project is to promote climate literacy among college and university students by employing social media as a tool and the UN as a platform for education. "Climate Change Literacy and Education" is one of four "Actions" recommended by the ACS Climate Change Public Policy Statement.



Who can participate?

Any undergraduate or graduate student who is a student member of ACS can participate.

How is the Project Funded?

Participants must secure funding through their home institutions and other outside sources.

Can I receive academic credit for participating?

Several previous students have received academic credit by linking this project to an internship, independent study, or project within a course. This is determined by you and your home institution.





What is the deadline for applying?

Applications will be accepted beginning March 1, 2017. The deadline for submission is June 15, 2017.

How do I apply?

Application procedures and additional information can be found at: <http://faculty.ycp.edu/~gfoy/>
 Click on: UNFCCC COP 23 Application

Appendix 3—Slides from Staff Reports

 <p>Government Affairs Activities Update Committee on Environmental Improvement</p> <p>American Chemical Society</p>	<p>American Chemical Society</p>  <p>J. Carl Maxwell Office of Public Affairs April 1, 2017 c_maxwell@acs.org</p>				
<h3>Areas of Activity</h3>  <ul style="list-style-type: none">• Rumors• House SST• Budget• EPA <p>American Chemical Society 3</p>	<h3>Hints & Allegations</h3>  <table><thead><tr><th>Rumors</th><th>Facts</th></tr></thead><tbody><tr><td><ul style="list-style-type: none">• Climate Websites Pulled Down• Databases erased• Scientists told not to speak publicly• Climate Offices Closed</td><td><ul style="list-style-type: none">• Science delegations reduced• "Climate" removed from some websites• Dark Twitter Feeds immediately after inauguration• Virtually Empty Government</td></tr></tbody></table> <p>American Chemical Society 4</p>	Rumors	Facts	<ul style="list-style-type: none">• Climate Websites Pulled Down• Databases erased• Scientists told not to speak publicly• Climate Offices Closed	<ul style="list-style-type: none">• Science delegations reduced• "Climate" removed from some websites• Dark Twitter Feeds immediately after inauguration• Virtually Empty Government
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Budget



- DOE cut 5.6 percent
 - DOE Science Cut \$900 million
 - Energy Research cut \$2 billion
 - ARPA-E eliminated
- EPA cut 31%
 - Cuts \$233 billion from ORD
 - Eliminates STAR Grants
- Commerce
 - Cuts \$250 from NOAA grants and programs
- NASA
 - Cuts Earth Science Research

American Chemical Society

7

EPA



- Executive Order to Repeal Clean Power Plan
- Bar Investigation into Scott Pruitt's Private email usage
- Administrator Pruitt questions role of CO2 in Global Warming
- Trump "Handler's" frozen out of top staff meetings
- Chlorpyrifos (Lorsban) ban proposed in 2015 is halted for more study
- Social Cost of Carbon in regulations eliminated

American Chemical Society

8

Highlights



- Sustainable Chemistry Renewed @ NSF
- Chemistry Caucus
 - 29 Members
 - Focus of Legislative Summit
- Successful Climate Science Day
 - 20+ Members of the Climate Solutions Caucus
- TSCA implementation continues at EPA

American Chemical Society

9



Questions?

American Chemical Society

10

ACS GCI CEI Update

April 2, 2017



REGISTER NOW

The 21st Annual Green Chemistry & Engineering Conference
Making our Way to a Sustainable Tomorrow

June 13 - 15, 2017
Reston, Virginia

#gcande | @ACSGCI | gcande.org

American Chemical Society

ACS Green Chemistry Institute

Strong Participation in Programming

- Symposia submission is up: Over **45** symposia proposals were submitted in October
- Abstract submission is up: Nearly **360** abstracts were submitted in February
- **42** Technical session, 7 concurrent tracks, nearly 90 posters
- Presidential Green Chemistry Challenge Award session will highlight this year's winners
- New topics include: circular economy, fluorine chemistry, bringing greener products to market
- Revamped student and postdoctoral scholar workshops

Exciting Keynote Speakers



Paul Chirik
Editor-in-Chief,
Organometallics
Edward S. Sanford
Professor of Chemistry,
Princeton University



Jillian Borlak
Editor-in-Chief,
Chemistry of Materials
Canada Research Chair
of Nanomaterials for
Energy
University of Alberta



William F. Feehery
President,
Duffield
Industrial Bioscience

GreenX: Rising Stars



Dr. Jillian Goldfarb
Asst. Professor of Mechanical
Engineering & Materials
Science & Engineering
Boston University



Dr. Corinna Schindler
Asst. Professor of
Chemistry
University of Michigan



**Dr. Adeline
Vozobkova-Kestel**
Asst. Professor of Chemistry
George Washington University

Partnering with ACS Journal



- Collaboration with the ACS *Sustainable Chemistry & Engineering* journal to create a virtual special edition.
- Select abstracts will be invited to submit to the Journal.
- Additional featured stories invited from Roundtables and session chairs.

Gearing up for 2018 and Beyond

22nd GC&E

- June 18-20, 2018 – Portland Hilton & Executive Tower - Portland, OR
- Theme: Use
- Looking for Program Chairs now

23rd GC&E

- June 11-13, 2019 – Reston Hyatt – Reston, VA
- Theme: Closing the Loop
- Potential joint international meeting

GC&E Sponsorship & Exhibitors

- Sponsors - \$ 82,000 pledged

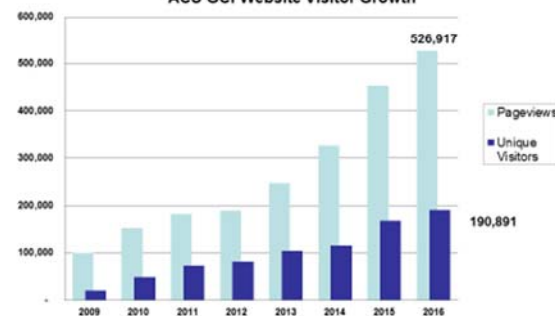


Exhibitors - \$ 8,700 pledged

- ACS Industry Member Programs
- ACS Publications
- Applied Separations
- InChemia
- Magritek
- Molecular Knowledge Systems, Inc.
- Oeko-Tex
- TCI Chemicals
- United Soybean Board
- Viridis Chem, Inc.

Outstanding Growth

ACS GCI Website Visitor Growth



ACS Chemistry for Life® **High-Quality Nexus Contributors** **ACS** Green Chemistry Institute

GreenCentre Canada changing chemistry, changing the world

American Chemical Society ACS Green Chemistry Institute

ACS Chemistry for Life® **Educational Webinars** **ACS** Green Chemistry Institute

RICHARD BLACKBURN

Cosmetic Chemistry

OCTOBER 20 AT 2PM EDT

BRUCE DALE

Sustainable Bioenergy Systems

DECEMBER 1 AT 2PM EST

NATURAL SUSTAINABLE INNOVATION

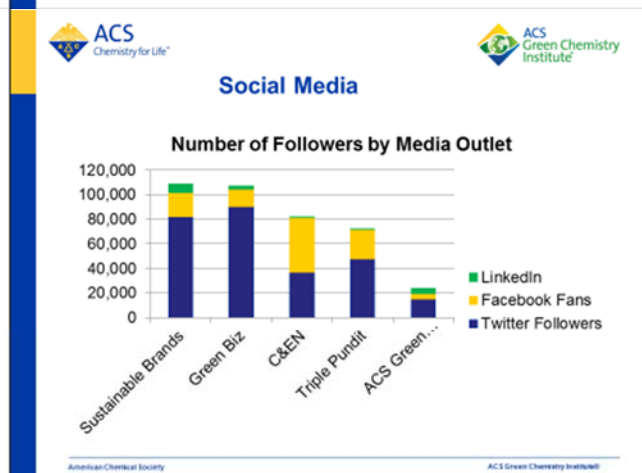
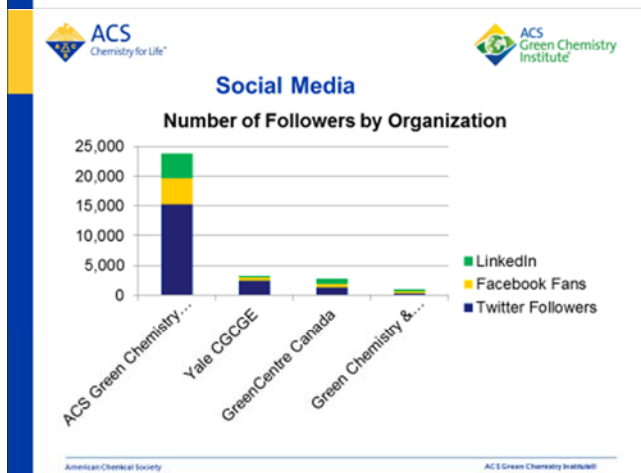
LIFE'S COMMITMENT TO RENEWABLE MATERIALS AND ECO-FRIENDLY PROCESSES

LIVE February 16 @ 2pm EST

SUSTAINABILITY CHALLENGES OF THE FIBRILS, CELLULOSE AND PULPING INDUSTRIES

LIVE March 30 @ 2pm EDT

American Chemical Society ACS Green Chemistry Institute



ACS Chemistry for Life® **The Story of a Successful Tweet** **ACS** Green Chemistry Institute

Over 9,000 visitors to page

Top Tweet earned 1,371 impressions

Happy #NationalPeriodicTableDay! Here are critically endangered elements facing supply restrictions in coming years! bit.ly/18rj0w

57 Retweets

8,464k Impressions

American Chemical Society ACS Green Chemistry Institute

ACS Chemistry for Life® **Pharmaceutical Roundtable** **ACS** Green Chemistry Institute

GCIPR OUTREACH IN INDIA / TWO-DAY CONFERENCE (Week of Feb 20)

- In collaboration with the Green ChemisTree Foundation and the Pharmaceutical Supply Chain Initiative (PSCI)
 - highlighted business value associated with an environmentally responsible supply chain
 - connected parts of Indian Pharma supply-chain (Generics, CMO's, CRO's) to its global Pharma partners to discuss green chemistry and engineering implementation
 - Discussed collaboration with GCIPR and PSCI to build an Indian-based GC&E Pharma RT sub-team.

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Pharmaceutical Roundtable

IGNITION GRANTS

- Kick-start research funding for sustainable solutions to chemistry and engineering problems relevant to the Pharma industry.
 - Awardees: Prof. O. Luca (Univ. of Colorado-Boulder), Prof. D. Hall (Univ. of Alberta), Prof. J. Byers (Boston College) and Prof. Z. Amara (Conservatoire National Des Arts Et Métiers).

TOOLS

- Laying groundwork to expand web-presence of RT tools

SPRING MEETING – GENENTECH, APRIL 6 – 7, 2017

Biochemical Technology Leadership (BTLR)

BE THE SOLUTION: BIO-BASED and RENEWABLE CHEMICALS CONFERENCE:

- Collaborating with Delaware Sustainable Chemistry Alliance (DESCA) to showcase regional development model
- To be held May 10-11, 2017 at the Rockwood Park Carriage House, Wilmington, Delaware.
- Discussions about
 - the emerging landscape of bridging technologies that are replacing fossil fuel-based raw materials,
 - major challenges and opportunities facing the bio-based industry today,
 - sustainability issues associated with the evolution from oxygenates to reduced molecules

Hydraulic Fracturing (HF)

A REFRESHED ROUNDTABLE!

- 3 new companies have joined since the face-to-face meeting in Houston, Texas. Active recruiting ongoing.
- Still looking for a second co-chair
- Organized a session at the Green Chemistry & Engineering Conference
- Looking into the development of a white paper or publication similar to what the Formulator's and Pharma RT produced to highlight green chemistry challenges and opportunities

Chemical Manufacturing

AltSep Project Continues

- Successful workshop on separations under applied fields, February 2 -3, 2017
- Planning workshop 5 for dilute solutions with focus on bio-based, small molecule separations. Partnering with DOE National Labs listening day

Biomass Conversion Project

- Performed sustainability review of top DOE-identified molecules from 2016 market assessment
- Considering next steps to work with leading academics to write a perspectives paper

Formulator's RT

Roundtable is stalled a bit – down to 8 companies

- Looking for second co-chair
- Continue to discuss expansion of RT into first-tier suppliers and personal care but without a lot of progress
- Small amines project with Phil Jessop moving forward slowly
- Project on Safety Solvents – collaboration with Chemical Mfg RT and led by Rebecca Korwin of State Industrials
- Collaborating on session at GC&E Conference

Core Competencies Reworked

- Based on the feed back from the community, the green chemistry core competencies were overhauled and reworked:
 - Reframed, reordered and reduced in number
 - Written in the language of chemists
 - Aligned with the current chemistry curriculum
 - Focused on general and organic chemistry for highest impact
 - Learning Outcomes for each competency have been identified

Creating Pull for Green Chemistry

- Partnering with other ACS educational initiatives to create pull and support integrated green chemistry into the chemistry curriculum:
 - ACS Exams Institute – Anchoring Concept Content Maps (ACCMs)
 - **Systems thinking** will be added as an 11th Big Idea in the content maps
 - Far reaching impact for integrating green chemistry into the curriculum
 - Committee on Professional Training (CPT) & Committee on Environmental Improvement (CEI) – Supplement on Green Chemistry & Sustainability
 - Creating a supplement to the ACS Guidelines for Bachelor's Degree Programs will provide a educators with clear examples and resources for integrating green chemistry into the foundational courses
 - Far reaching impact for integrating green chemistry into the curriculum

The Road Ahead

- Finalize the first draft of the roadmap and seek feedback
 - Need to push ahead, put a stake in the ground, here a few things that we know the community wants:
 - Toxicology, reaction efficiency, systems thinking/LC thinking
- Expert workshop(s) to produce targeted educational resources needed to launch the roadmap:
 - Produce specific examples to launch effort and create a template for future resources
 - Evaluate existing materials and identify needed resources
 - Develop plans for modifying or creating resources
 - Create plans for capacity building opportunities for educators

GREEN CHEMISTRY EDUCATION ROADMAP: ADDITIONAL INFORMATION

Green Chemistry Core Competencies

- To advance the practice of green chemistry, students should master three core competencies that strengthen their core chemistry knowledge and skills and enable them to apply these to the design of chemicals, syntheses and products.
- Within each competency, key concepts, practices/tools and interdisciplinary connections are described that work together to achieve the aims of green chemistry.

Understand and evaluate benefits and adverse impacts of chemicals and materials in society

- Students will describe the benefits and impacts of the use of chemicals and materials in society.
- Students will use knowledge of chemical partitioning and material flows, along with an understanding of the chemistry in natural and technical systems, to describe the fate and impacts of chemicals in the environment.
- Students will effectively integrate chemicals and materials into products to achieve the desired functional performance while minimizing life cycle impacts.
- Students will be able to compare, and optimize, the benefit-impact ratio across the life cycle. They will use tools and data to make decisions, including approaches to assess with tradeoffs in complex decision making. Need to be careful with these terms. Need to imply that things will be better

Design/select chemicals and materials for desired function and minimal adverse impact

- Students will describe examples of how the molecular structures of chemicals and materials influence the desired properties and functions and undesirable impacts of those substances.
- Students will be able to recognize structures known to influence certain properties/functions and using structure/activity relationships (SARs) to predict properties of new structures.
- Students will use knowledge of molecular structures and functional groups to predict the impacts of chemicals on health and environment and the metabolism and degradation of those molecules in environmental and biological compartments.
- Students will employ models and computational approaches to predict the structures of chemicals and use structure-property relationships in chemistry to predict molecular and material function, including properties, performance, and reactivity, (kinetic, thermodynamics, chemical potential)
- Students use strategies and tools to design and select molecules and materials that maximize functional performance while minimizing environmental, toxicological and safety impacts.

ACS Chemistry for Life® **Core Competency 3:** ACS Green Chemistry Institute®
Design, evaluate and optimize chemical syntheses to produce chemicals efficiently from renewable, abundant feedstocks while reducing hazard and waste

- Students will understand that chemicals are prepared and manufactured through transformations of raw materials via synthetic pathways and use knowledge of reaction pathways to identify opportunities for improving efficiency and reducing waste.
- Students will use their understanding of how the transformations of matter and the synthesis of chemicals depends upon reaction conditions to select starting materials, reagents and solvents, to design new greener transformations, or to improve existing syntheses.
- Students will use strategies and tools to utilize alternative feedstocks, reaction media, and more efficient syntheses and purifications, to produce products efficiently, economically and with a minimal human health and environmental impacts.
- Students will be able quantitatively measure efficiency and impacts of reaction pathways, using tools and data to compare alternative pathways and/or to develop or improve reaction pathways.

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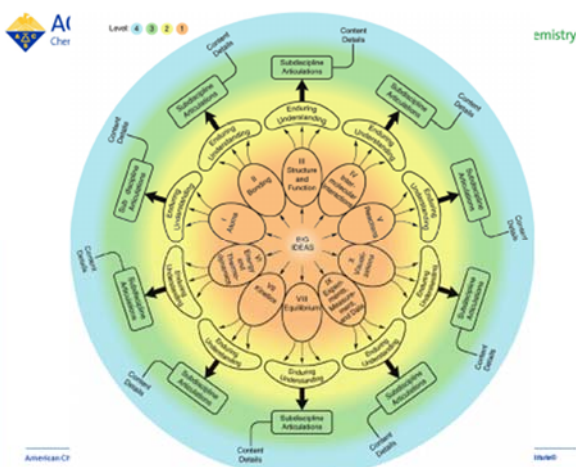
ACS Green Chemistry Institute®

ACS Chemistry for Life® ACS Green Chemistry Institute®
Anchoring Concept Content Maps

- For the past five years, the ACS Exams Institute has been working on constructing Anchoring Concept Content Maps (ACCM). These maps provide a content framework for the entire undergraduate chemistry curriculum using a four-tiered structure.
- The first two tiers are the most broad and subdiscipline independent. The third and fourth tiers get progressively more detailed and are subdiscipline specific.
- The ACS Exams Institute has published the Content Maps for general and organic chemistry through the numerous contributions from faculty and instructors through many, many focus groups and workshops.
- They are now interested in finding ways to include green chemistry into the maps and have invited members of the community to participate in the next round of workshops at the ACS National Meeting in San Francisco

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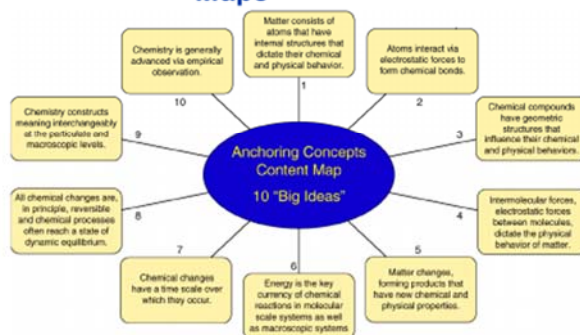
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ACS Chemistry ACS Exams Institute: ACS Green Chemistry Institute®
Anchoring Concept Content Maps



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ACS Chemistry for Life® ACS Green Chemistry Institute®
11th Big Idea: Systems Thinking

11. Systems: Chemical processes are often linked, leading to a system where understanding is forged in terms of inter-relationships rather than repeated cause-and-effect steps.

- Reactions can be combined into sequences or cycles and intermediate species are often critical in understanding the resulting system.
- Inter-relationships may be enumerated to include the origins and ultimate fate of chemicals involved in processes.
- Natural systems can include chemicals and processes that span multiple length or time scales.
- Chemical systems can be designed considering both the molecular scale events and ultimately at macroscopic scale for the use of chemistry in society.
- Measurements of components and rubrics for allowed parameters of chemicals and processes play an important role in decision making at the systems level.

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Appendix 4—Slides from ConC

<p>American Chemical Society</p> <p>Joint Board-CPC Task Force on Governance Design</p> <p>ACS National Meeting San Francisco April 2017</p> <p>ACS Chemistry for Life®</p> <p>As of 3/28/17</p>	<p>Task Force on Governance Design ACS Chemistry for Life®</p> <p>We in governance have the challenge and opportunity to ensure that ACS continues to achieve the objects of our Charter and provide value well into the 21st century, as we have done in the 19th and 20th.</p>
<p>Task Force on Governance Design ACS Chemistry for Life®</p> <p>Purpose</p> <ul style="list-style-type: none">• Engage stakeholders in identifying opportunities and issues for governance improvement;• Design a next-generation governance model enabling ACS to advance its objects;• Develop the case for effective change based on that model, communicate with stakeholders to incorporate their feedback; and• Provide the model and implementation road map to the Board and Council.	<p>Task Force Members ACS Chemistry for Life®</p> <ul style="list-style-type: none">• ACS Board of Directors• Council Policy Committee• Committee on Nominations & Elections• Committee on Committees• Committee on Constitution & Bylaws• Committee on Corporation Associates• Diversity & Inclusion Advisory Board• Committee on Younger Chemists <p>American Chemical Society 4</p>
<p>Our Charter – Our Foundation ACS Chemistry for Life®</p> <ul style="list-style-type: none">• "Patriotic and National Organization"<ul style="list-style-type: none">– Signed by FDR, August 25, 1937– ACS and a few other groups have a special relationship with the Federal Government.– ACS has "special" responsibilities. <p></p>	<p>Governing Documents ACS Chemistry for Life®</p> <p>Articles of Incorporation (“Federal Charter” supersedes all rules of incorporation)</p> <p>Constitution <i>(essential provisions; most difficult to amend)</i></p> <p>Bylaws <i>(somewhat difficult to amend)</i></p> <p>Regulations Rules & Operating Procedures</p>

ACS Objects – Our Foundation



ACS is unified by our charter with the purpose (objects) to encourage in the broadest and most liberal manner the advancement of chemistry in all its branches. ACS accomplishes this by:

- **Promoting research** in chemical science and industry;
- **Improving** the qualifications and usefulness of chemists through high standards of professional ethics, education, and attainments;
- **Increasing** and diffusing chemical knowledge; and

ACS Objects – Our Foundation



- **Supporting** meetings, professional contacts, reports, papers, discussions, and publications to promote scientific interests and inquiry in order to
 - **foster** public welfare and education,
 - **aid** the development of our country's industries, and
 - **add** to the material prosperity and happiness of our people.

<https://www.acs.org/content/dam/acsorg/about/governance/charter/bulletin-5.pdf>

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Governing Documents



1. **Articles of Incorporation** supersedes all rules

2. **Constitution**

3. **Bylaws**

4. **Regulations**

1. Rules
2. Operating Procedures



Why Consider Changes?



- **Ensure flexibility** in governance
- **Create an agile Society**
- **Retain and build upon** work and expertise
- **Be competitive** and continue to grow the ACS

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Thank You



Co-Chairs
Mary K. Carroll
Paul W. Jagodzinski

Members

- Frank Blum
- George Bodner
- Bill Carroll
- Jim Carver
- Judy Giordan
- Teri Quinn Gray
- Rigoberto Hernandez
- Wayne Jones
- Natalie LaFranzo
- Les McQuire
- Ingrid Montes
- Carolyn Ribes
- Barbara Sawrey

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ACS Online YellowBook and Committee Preference Form

Committee on Committees (ConC)

ACS YellowBook



- On-line directory of ACS volunteers and leaders:
 - <https://www.yellowbook.acs.org>
 - National Officers and Directors
 - Councilors
 - Committees
 - Local Section Officers
 - Division Officers
- Is your contact information up to date?
 - (excluding ACS Local Section and Division Offices, and ACS National Service records)
- Is your biography current?
- Need assistance: Cheryl Vockins (c_vockins@acs.org) or the Office of the Secretary and General Counsel (secretary@acs.org)

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Committee Preference Forms



- 2018 Cycle Open: March 27-June 9
- Councilors, Committee members, interested volunteers should use form annually
- Especially important if :
 - You are up for renewal on your current committee
 - Associates (must complete every year)
 - You are up for re-election as a Councilor
 - You have reached the term-limit on current committee
 - You want to join a different committee
- All appointments are made by the ACS President and/or Board Chair
 - ConC provides recommendations during the Fall Meeting
 - We want to know about your preferences
- Appointments are completed in December

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Committee Preference Forms



- If your term is expiring, and if you want to be reappointed to your current committee, make that your first choice.
- If your term is not expiring this year, it WILL automatically show as your first choice (1st). You do not need to re-choose this committee for the coming year or continue making further choices.
- Select other committees you may be interested in
- You may choose up to 4 committees
- Add the rationale: What will you bring to the committee? Why does this committee interest you?

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Committee Preference Forms



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REMINDER



Update contact information or committee preferences:

<https://www.yellowbook.acs.org>

Need assistance:

c_vockins@acs.org
secretary@acs.org

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4

2016 Committee Demographic Survey Results



Committee on Committees (ConC)

Committee Demographic Survey



ConC Subcommittee on Diversity charge:

“to monitor the diversity of the ACS committee structure, identify problems, and make recommendations to solve them, and to cooperate with diversity committees or subcommittees of other groups within ACS, and to offer the assistance of ConC in their efforts.”

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Committee Demographic Survey



- The purpose of the survey:
 - Provide an education to broaden ACS member awareness
 - Provide the ACS a snapshot of committee demographics

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Committee Demographic Survey



- Launched July 26, 2016
- 675 Committee Personnel (Committee Chairs, Members, Associates & Consultants)
 - 29 Council-related Committees
- 76% overall participation rate (512/675)
- 67% overall CEI participation rate (20/30)

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ACS Committee Demographics CEI

Prepared by Survey Design & Analysis
Ed Halteman, Ph.D., 303-818-3679
November 10, 2016

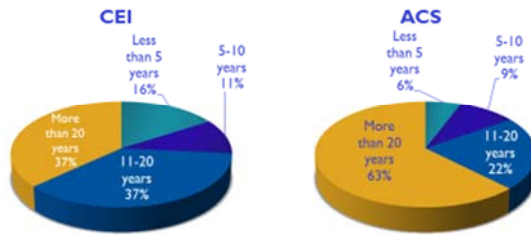


Committee Participation



Time with ACS

How long have you been a member of the American Chemical Society? N=19



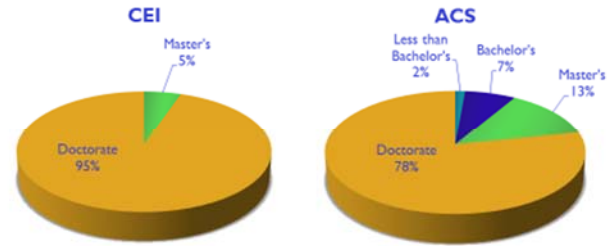
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SURVEY DESIGN & ANALYSIS

10/12/2016

Formal Education

What is the highest level of formal education you have completed? N=19



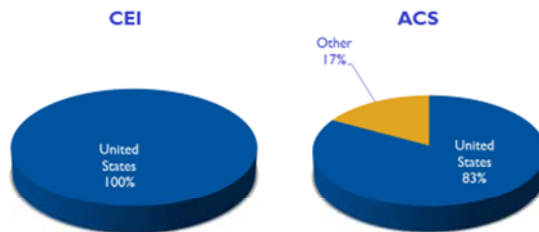
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SURVEY DESIGN & ANALYSIS

10/12/2016

Country of Birth

In what country were you born? N=19



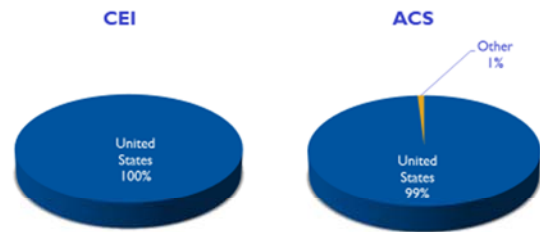
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SURVEY DESIGN & ANALYSIS

10/12/2016

Country of Residence

In what country do you currently reside? N=19



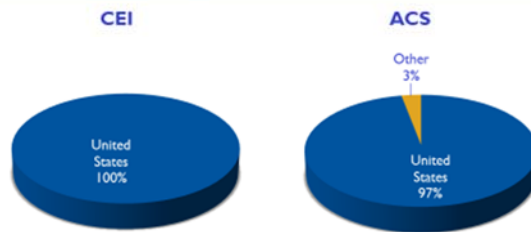
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SURVEY DESIGN & ANALYSIS

10/12/2016

Country of Citizenship

Please indicate the country of your citizenship. N=19



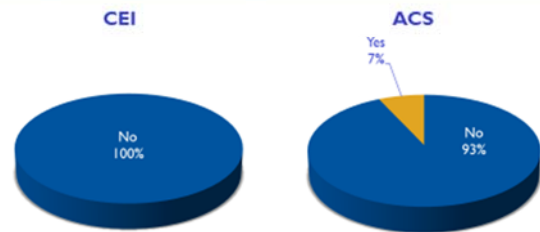
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SURVEY DESIGN & ANALYSIS

10/12/2016

Multiple Citizeships

Are you currently a citizen of more than one country? N=19



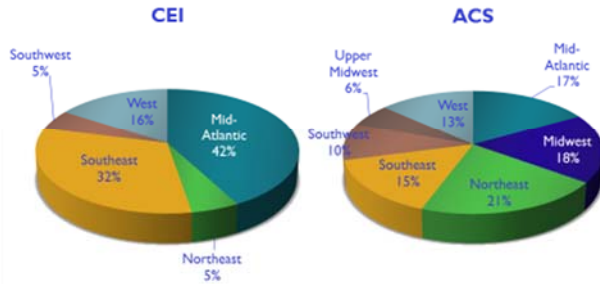
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SURVEY DESIGN & ANALYSIS

10/12/2016

US Region

In what region of the United States do you currently reside? N=19



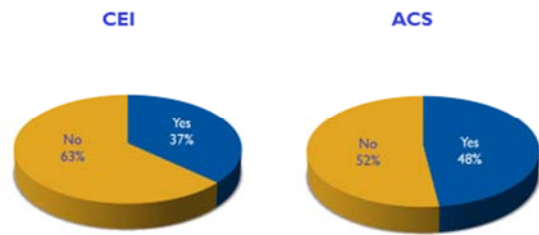
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SURVEY DESIGN & ANALYSIS
INTERPERSONAL PARTNER

10/12/2016

Languages other than English

Are you able to speak or read in a language other than English? N=19



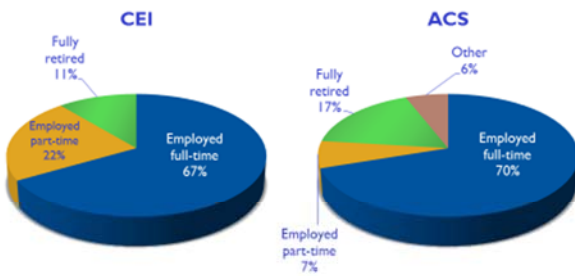
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SURVEY DESIGN & ANALYSIS
INTERPERSONAL PARTNER

10/12/2016

Employment Status

What is your current employment status? N=18



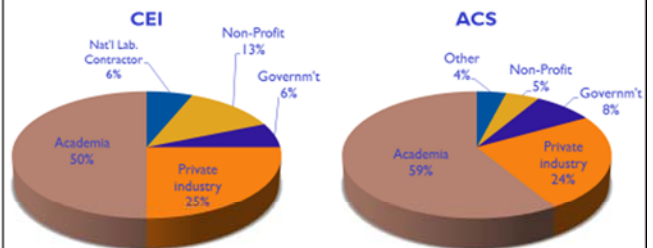
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SURVEY DESIGN & ANALYSIS
INTERPERSONAL PARTNER

10/12/2016

Primary Employment Sector

In what employment sector do you work primarily? N=16



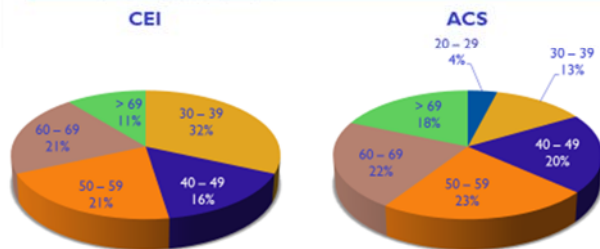
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SURVEY DESIGN & ANALYSIS
INTERPERSONAL PARTNER

10/12/2016

AGE

Into which of the following age groups do you fall? N=19



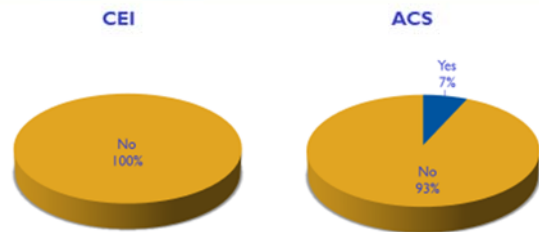
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SURVEY DESIGN & ANALYSIS
INTERPERSONAL PARTNER

10/12/2016

Disabilities

Do you have any physical and/or psychological disabilities that need accommodation? N=19



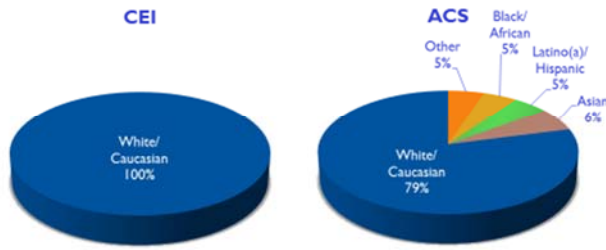
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SURVEY DESIGN & ANALYSIS
INTERPERSONAL PARTNER

10/12/2016

Race/Ethnicity

How do you identify your race and/or ethnicity? N=19



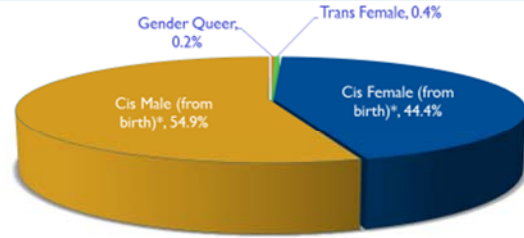
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SURVEY DESIGN & ANALYSIS
WHEN YOU ASK THE RIGHT QUESTIONS

10/12/2016

Member Gender

With what gender do you most identify? N=450



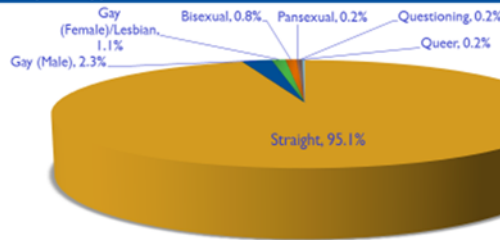
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SURVEY DESIGN & ANALYSIS
WHEN YOU ASK THE RIGHT QUESTIONS

9/19/2016

Member Sexual Orientation

How do you identify your sexual orientation? N=471



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SURVEY DESIGN & ANALYSIS
WHEN YOU ASK THE RIGHT QUESTIONS

9/19/2016