

Note: Schedule subject to change. After you [register](#), you will receive a login for the conference which will give you access to [gcande2020.psav.live](#), where you can build and save your personal schedule. Live Discussions will occur via Zoom and links will be provided. Videos only available for one-time viewing and not available on-demand are noted in the schedule.

Monday, June 15

11:00-11:10	Welcome Remarks						
11:10-12:00	Keynote presented by Bruce Lipshutz: "Following Nature's Lead; Synthetic Chemistry in Water. It's Our Future"						
12:00-12:55	Poster Session, Product Showcase & Exhibits						
Session	Leaving Organic Solvents Behind: Chemistry in Aqueous Media	Advances in Transitioning from Batch to Continuous Flow	Connecting GC, Systems Thinking and the UN Sustainable Development Goals to the Undergraduate Chemistry Curriculum	Information Driving Greener Design: Design & Use of Safer Chemicals to Meet Market Demand	Bio-based & Renewable Chemicals Innovations Session 1	Enabling a Circular Economy for Materials in the Consumer Goods Industry	Sustainability in Emulsion Polymers for Coating
Presider/Organizers	Megan Shaw & Kevin Maloney	Paul Richardson & Timothy Braden	Edward Brush & Grace Lasker	Kathleen Compton, Bridget Williams & Kendra Tyler	Isamir Martinez	Thomas Kwan & Paul Price	Sylvain Caillol, Vincent Ladmiral & Dean Webster
1:00-1:05	Introductory Remarks						
1:05-1:25	Chemistry in water 101 <i>Obligacion</i>	Scaling photochemical reactions in flow using visible light <i>Moschetta</i>	Systems thinking and the UN Sustainable Development Goals as a thematic framework for general chemistry <i>Freeman</i>	What is safer? The U.S. EPA's Safer Choice standard criteria as a tool for chemical design <i>Rudisill</i>	Levulinates and levulinate ketals: a new generation of sustainable, ecofriendly biobased solvents with broad application area <i>Block</i>	Road-map for innovators - commercialization in a circular economy <i>Engler</i>	Monomers from plant oil triglycerides and biobased emulsions thereof <i>Vorgnov</i>
1:25-1:45	Activating metalloenzymes by electricity: Bioelectrocatalytic aerobic oxidation in the synthesis of islatravir <i>Zhang</i>	Cryogenic flow chemistry at pilot plant scale; first experiences with the CryoFlowSkid <i>Broxterman</i>	Highlighting the importance of diversity, equity, and inclusion in the scientific community through classroom discussion of the UN SDGs <i>Laviska</i>	Sustainable cleaning: Perspectives from a raw chemical material manufacturer <i>Capracotta</i>	Catalytic conversion of methyl levulinate, a biorefinery side stream, into bulk and fine chemicals <i>Tin</i>	Toward authentically green cosmetic ingredients: Life cycle thinking to improve sustainability from cradle to grave <i>Fevola</i>	Minimal gels from anisotropic latex particles <i>Kao</i>
1:45-2:05	Environmentally benign selective deprotection and deuterodehalogenation of a broad variety of functional groups by using a Pd/C-Al catalytic system in water <i>Zorigt</i>	Analysis of continuous reactive crystallization process to beta-lactam antibiotics via green chemistry criteria <i>Bommarius</i>	Connecting systems thinking and the United Nations Sustainable Development Goals across the chemistry curriculum at the University of Michigan-Flint <i>Kingsley</i>	Designing 100% bio-based ethoxylates to meet 1,4-dioxane regulations <i>Jaynes</i>	Sustainable production of bio-based chemicals (platform molecules) from paper waste <i>Doroshenko</i>	Zinc oxide induced changes to sunscreen efficacy and toxicity under UV irradiation highlight the need for lifecycle-based product design <i>Ginzburg/Blackburn</i>	Synthesis of biobased waterborne latexes from renewable building blocks by emulsion polymerization <i>Lacroix-Desmazes</i>
2:05-2:25	Rieske business: Engineering rieske dioxygenase enzymes <i>Froese</i>	Live Discussion	Live Discussion	Live Discussion	A shortcut route to close nitrogen cycle: production of bio-based amines via selective deoxygenation of nitrogen-containing biomass <i>Lin</i>	Unbeatable beets: Creation of an integrated sugarbeet pulp biorefinery producing functional ingredients for home and personal care products <i>Nolles</i>	Live Discussion
2:25-2:45	Live Discussion				Live Discussion	Live Discussion	
2:45-3:05	Networking Activities						
3:05-3:10	Introductory Remarks						
3:10-3:30	Organic chemistry in water: Applications in the pharmaceutical industry <i>Braje</i>	Continuous flow process for conversion of glycerol to lactic acid using single-site heterogeneous catalysts (SSHCs) <i>Wang</i>	STEAM FIT: Engaged student learning through cross-disciplinary collaborations <i>Pearson</i>	Reducing ecotoxicity and antimicrobial resistance through reversible antimicrobials <i>Hart-Cooper</i>	Utilizing estolides as sustainable synthetic petroleum replacements <i>M. Miller</i>	Croda's ECO range: An evolution of sustainability <i>Hood</i>	Original materials obtained from polymerization of pickering emulsions <i>Schmitt</i>
3:30-3:50	Biomimetic [2Fe-2S]-metallopolymers for enhanced electrocatalytic hydrogen evolution from aqueous feedstock <i>Karayilan</i>	Selective hydrodeoxygenation (HDO) of bio-derived acyl furan to value-added renewable surfactant from batch to continuous flow reaction <i>Yang</i>	Not just an academic exercise: Interdisciplinary student teams design greener solutions to global challenges <i>Buckley/Schwarzman</i>	Connecting Businesses with Safer Choice through Training and Interns <i>Cox</i>	Bio-based phosphonates as lubricants <i>Bantchev</i>	Enabling sustainable materials via green chemistry: Technologies and perspectives from a raw material supplier <i>Su</i>	Advances in non-isocyanate urethanes in coatings <i>Soucek</i>
3:50-4:10	Synergy between water, micelle, and metal nanoparticle for sustainable catalysis <i>Handa</i>	Added acid effects in heterogeneous ruthenium catalysts on conventional and polymeric supports <i>Sanger</i>	Sustainable polymers as a platform for teaching systems thinking and the UN Sustainable Development Goals <i>Wissinger</i>	How a local government program uses Safer Choice to protect the environment and health of our communities <i>Brown</i>	High oleic soybean oil: A new feedstock for industrial products <i>Heggs</i>	Evaluation of alkenones, a green and sustainable, plant-derived wax <i>Baki/O'Neill</i>	Hybrid composites of carbon nanotubes and poly(3,4-ethylene dioxthiophene) nanoparticles for thermoelectric applications <i>Gomez</i>
4:10-4:30		Live Discussion	Approaches to integrating green and sustainable chemistry towards a sustainable future: Work in progress <i>Abhyankar</i>	From chemists to chemophobes: Bridging the gap with Safer Choice <i>van Bergen</i>	Live Discussion	Live Discussion	A glance at PU coatings with reduced environmental impacts <i>Caillol</i>
4:30-4:50	Live Discussion		Live Discussion	Live Discussion			Live Discussion
4:50-5:30	#gcande Twitter Happy Hour						

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Tuesday, June 16

11:00-11:10	Welcome Remarks & Announcement of EPA Green Chemistry Challenge Award Winners								
11:10-12:00	Keynote presented by Thomas Jaramillo: “Developing new catalysts and processes for the sustainable production of fuels and chemicals”								
12:00-12:55	Poster Session & Exhibits								
Session	Using Computers to Deliver GC: in Silico Techniques for Designing & Developing Chemical Reactions	Making Your Undergraduate Chemistry Labs Greener & Safer	Reimaging Chemistry Education: Systems Thinking, and Green and Sustainable Chemistry	Information Driving Greener Design: Enabling Sustainable Material Flows by Identifying & Addressing Information Needs	Bio-based and Renewable Chemicals Innovations - Session 2	Designing New Molecules for More Sustainable Household & Personal Care Products	International Opportunities & Success Stories for the Production of Chemicals/Fuels from Waste	Life Cycle Thinking to Drive Green Chemistry in the Electronics Supply Chain	
Presider/Organizers	Jared Piper & Jason Stevens	Kendra Denlinger & Ralph Stuart	Thomas Holme & Peter Mahaffy	Lauren Heine, Anna Montgomery & Raymond Garant	Isamir Martinez	William Shearouse & David Constable	Beau Hoffman & Inge Johansson	John Katz, Michael Kirschner & Leo Kenny	
1:00-1:05	Introductory Remarks								
1:05-1:25	PMI predictor app to enable green-by-design chemical synthesis <i>Borovika</i>	Barriers to implementing green chemistry <i>Woodbridge</i>	Elements of systems thinking and beyond <i>Mahaffy</i>	Introducing a product design framework and software application, PRISM, that incorporates principles of green chemistry and engineering to increase safety and sustainability, while supporting a circular economy <i>Montgomery</i>	Carboxylated chitosan nanocrystals as a biomass-based support for gold catalysis <i>Jin</i>	Sustainable raw materials for formulations <i>(Not Available On Demand)</i> <i>Petitjean</i>	Waste Resources Availability and Economic Analysis in the United States <i>Milbrandt</i>	1:03pm – 1:15pm - CEPN Overview <i>Brody-Heine</i>	
1:25-1:45	From automation to autonomy: Creating and deploying self driving laboratories <i>Hein</i>	Ultrasonic-assisted transesterification: A green miniscale organic laboratory experiment <i>Liu</i>	Educating for a systems-inspired and sustainable future: A framework for green and sustainable chemistry and engineering <i>Gilbert</i>	Evaluating and communicating uncertainties for hazard evaluation in green chemistry <i>Plugge</i>	Diversifying biochar applications towards the implementation of a circular economy <i>Vidal</i>	Dynamics of lipid vesicles in flow using a Stokes trap : Applications in biology and personal care products <i>(Not Available On Demand)</i> <i>Kumar</i>	Advancements in chemical recycling of mixed plastic wastes <i>Stapf</i>	1:15pm – 1:25pm CEPN Priority Chemical Selection Process <i>Reece</i>	
1:45-2:05		Fitting risk assessment and green chemistry into the organic laboratory <i>Denlinger</i>	Green and sustainable core competencies in chemistry education, research and innovation <i>Constable</i>	Overcoming challenges to advance better chemistry in product design and manufacturing by expanding access to verified actionable chemical hazard and performance data <i>Heine</i>	Adrenaline rush towards CO2 <i>Eftaiha</i>	Natural deep eutectic systems: Green solvents for the extraction and stabilization of phytochemicals from Beta vulgaris L. peel <i>Rente</i>	Integrated biorefinery for chemicals and fuels production from waste biomass <i>Figueroa</i>	1:25pm – 1:44pm CEPN Safer Substitution Program <i>Katz</i>	
2:05-2:25	Computer-assisted synthesis of the pupukeanane natural product <i>Hardy</i>	eRAMP: Development of a risk assessment module for undergraduate organic teaching labs <i>Stuart</i>	Identifying the essential features of systems thinking to support chemistry teaching and learning <i>Orgill</i>	GreenScreen certification of safer alternatives for PFAS-free firefighting foams <i>Davies</i>	Live Discussion	Live Discussion	Live Discussion		
2:25-2:45	Live Discussion		Live Discussion	Live Discussion					
2:45-3:05	Networking Activities			EPA Green Chemistry Challenge Awards: Past and Present (Invited) <i>Chen Wen</i>					
3:05-3:10	Introductory Remarks			Introductory Remarks: EPA Green Chemistry Challenge Awards: Past and Present (Invited) <i>Widawsky</i>					
3:10-3:30	Improving processes through bayesian optimization: The process optimizer <i>Taaning</i>		Expanding boundaries in general chemistry to build a systems thinking approach to life cycle analysis for a pharmaceutical molecule <i>Holme</i>	Microbially produced high-purity glucaric acid for diverse uses <i>Smith</i>	Generic biphasic approach towards the production of renewable fuels via catalytic deoxygenation of fatty acids <i>Jia</i>	Design of oleo-furan surfactants derived from high-oleic plant oil <i>Eady</i>	Upgrading wet waste volatile fatty acids into advantaged transportation fuels <i>Vardon</i>	Alcohol and water processed solvent resistant, semiconducting films based on a molecular organic red dye <i>Harding</i>	
3:30-3:50	Computer assisted synthesis – molecular representations for reaction optimization and discovery <i>Paton</i>		Teaching systems thinking through a fuels and energy chemistry course <i>Tandler</i>	eShuttle™ technology for propylene oxide: Improving costs and minimizing waste <i>Ashtari</i>	Recent developments in application of microbial surfactants for stimulation of unconventional oil and gas wells <i>Mahmoudkhani</i>	Chemoenzymatic methodology for the controlled and green synthesis of rhamnolipid biosurfactants <i>Roberts</i>	Successful scale-up of continuous hydrothermal liquefaction (HTL) systems to enable resource recovery from wet organic wastes <i>Billing</i>	Towards sustainable organic electronics <i>Santato</i>	
3:50-4:10			Microplastics outreach program: A systems-thinking approach to teach high school students about the chemistry and impacts of plastics <i>Schiffer</i>	In search of Green Chemistry and Sustainability: Biopolymers as Plastic Alternatives? <i>Shamshina</i>	Catalytic extraction of biofuels from lignocellulosic biomass through anaerobic digestion <i>Akor</i>	Alkenones, a new green and sustainable structuring agent for lipsticks <i>Maktabi</i>	Hydrogen, waste, and the circular economy: Sector coupling for greater decarbonisation <i>Roberts</i>		
4:10-4:30	Live Discussion		Developing a system of scientific thinking and safety mindset into a three quarter general chemistry laboratory <i>Flener-Lovitt</i>	Live Discussion: EPA 2020 Winner	Live Discussion	Live Discussion	Green conversion of food waste to energy through catalytic hydrothermal liquefaction <i>LeClerc</i>	Live Discussion	
4:30-4:50		Live Discussion	Live Discussion: EPA Green Chemistry Challenge Awards: Past and Present (Invited)			Live Discussion			
4:50-5:30	#gcande Twitter Happy Hour								

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Wednesday, June 17

11:00-11:10	Welcome Remarks							
11:10-12:00	Keynote presented by Jeannette Garcia: "Advancing Chemistry to Address Challenges in Sustainability"							
12:00-12:55	Poster Session & Exhibits							
Session	Green Chemistry Curriculum Designed to Inspire (Systems Design): Rapid Fire Session	Poised at a Unique Moment of "Can" Vs. "Should": Reckoning EHS Challenges and Opportunities in the Future of Additive Manufacturing	Earth-Abundant Metal Catalysis	Making Organic Chemistry more Sustainable (Special Student/Postdoc Session)	Safety: A Pillar of Green Chemistry	Design of Chemicals, Novel Chemistries, Synthetic Pathways and Processes that Enable a Circular, More Sustainable Economy	Successful International Green Chemistry Case Studies in Emerging Economies	Pathways to New Products Using Lignocellulosic Feedstocks
Presider/Organizers	Jane Wissinger, Alexey Leontyev & Natalie O'Neil	Justin Bours & Thomas McKeag	Neil Strotman & Bradley Gates	David Leahy	Christopher Nawrat & Kevin Maloney	Ettigounder Ponnusamy & Srinivasan Ambatipati	Paul Anastas & Karolina Mellor	Adelina Voutchkova, Jason Locklin, Peter Deuss & Vikram Yadama
1:00-1:05	Introductory Remarks							
1:05-1:25	Incorporating green chemistry into a two-semester organic chemistry lecture sequence <i>(Not Available On Demand)</i> Hunsen	UV curable 3D printing/additive manufacturing – an industrial perspective <i>Idacavage</i>	Aerobic oxidation using galactose oxidase and an earth-abundant metal activator in the synthesis of islatravir (MK-8591) <i>(Not Available On Demand)</i> Johnson	Electrocatalytic C–N coupling via anodically generated hypervalent iodine intermediates <i>Frey</i>	Anaphylaxis induced by peptide coupling agents: Lessons learned from repeated exposure to HATU, HBTU, and HCTU <i>McKnelly</i>	Entropy as a guide for waste management modeling <i>Hendricks</i>	Global green chemistry initiative: Goals and strategy <i>Anastas & Schwager</i>	WSU-PNNL Bioproducts Institute: How solving another problem can facilitate biorefining? <i>Holladay</i>
Integrating green chemistry into organic chemistry course sequence through systems-oriented concept map extensions and assessing green chemistry content knowledge using chemistry identity framework <i>Leontyev</i>	Rapid telescoped scalable continuous flow synthesis of KRX-101, a potent FLT-3 inhibitor <i>Biyani</i>			Making chemistry greener and safer <i>Constable</i>				
1:25-1:45	Controlled chaos: Broadening student thinking while narrowing their focus in the teaching laboratory <i>Laviska</i>	Finding safer AM alternatives through collaboration <i>McKeag</i>	Sustainability in chemical development: How base metal catalysis can impact process chemistry <i>Wisniewski</i>	Expressed protein ligation without intein - an ultra-simple method for protein terminal functionalization <i>Qiao</i>	Safe and scalable methods for Evans oxazolidinone cleavage <i>Fraunhoffer</i>	Live Discussion	Green chemistry in Sri Lanka – natural dye from tea leaves <i>(Not Available On Demand)</i> <i>Edirisinghe</i>	A mild reactive extraction approach for the separation of bioproducts from fermentation broth <i>Moore</i>
Green chemistry commitment in Nigeria: Opportunities, prospects and challenges <i>Alayande</i>	Development of sustainable biocatalyst for carbene transfer chemistry in aqueous media <i>Vargas</i>			Live Discussion	Green chemistry in Uganda - epoxidation of olefins with molecular oxygen as the oxidant using gold catalysts supported on polyoxometalates <i>Ssekajja</i>		Live Discussion	
1:45-2:05	A bio-based polymer on a cross-disciplinary journey through the undergraduate curriculum <i>(Not Available On Demand)</i> Fort	How alternatives assessment can guide material and process interventions in additive manufacturing systems <i>Heine</i>	Sustainability in chemical development: How base metal catalysis can impact process chemistry <i>Wisniewski</i>	Development of sustainable biocatalyst for carbene transfer chemistry in aqueous media <i>Vargas</i>	Live Discussion	Live Discussion	Green chemistry in Uganda - epoxidation of olefins with molecular oxygen as the oxidant using gold catalysts supported on polyoxometalates <i>Ssekajja</i>	Live Discussion
Distributed drug discovery of new antibiotics: Identifying green solid-phase synthesis methods for course-based undergraduate research experiences <i>Dounay</i>	Live Discussion			Live Discussion	Live Discussion			
2:05-2:25	Modeling systems design through sustainable polymer experiments in the classroom <i>Wissinger</i>	Live Discussion	Sustainability in chemical development: How base metal catalysis can impact process chemistry <i>Wisniewski</i>	Development of sustainable biocatalyst for carbene transfer chemistry in aqueous media <i>Vargas</i>	Live Discussion	Live Discussion	Green chemistry in Uganda - epoxidation of olefins with molecular oxygen as the oxidant using gold catalysts supported on polyoxometalates <i>Ssekajja</i>	Live Discussion
Undergraduate organic chemistry labs designed to maximize resource efficiency <i>O'Neil</i>	Live Discussion			Live Discussion	Live Discussion			
2:25-2:45	Live Discussion							
2:45-3:05	Networking Activities							
3:05-3:10	Introductory Remarks							Connecting Green Chemistry Systems Thinking and the UN Sustainable Development Goals to the Undergraduate Chemistry Curriculum
3:10-3:30	Live Panel Discussion: Green Chemistry Curriculum Designed to Inspire (Systems Design): Rapid Fire Session (Live Zoom Link Will Be Provided)	Using life cycle assessment of systems to demonstrate the role design and design thinking plays in the research, development, demonstration and implementation of green and sustainable chemistry <i>Faludi</i>	Nickel-catalyzed cross-electrophile coupling reaction for the synthesis of alkylcyclopropanes <i>Sanford</i>	Rationalizing the use of stable carbenes as transition-metal mimics <i>(Not Available On Demand)</i> <i>Vermersch</i>	Improving chemistry safety within MRL: Reaction review and beyond <i>Vickery</i>	Easily digestible: Scoping a \$10 billion market for alternatives to PFAS in food packaging <i>Rudisill</i>	Green chemistry in Brazil – BRAKEM, implementation of a new catalyst in the production of linear low-density green polyethylene <i>Werneck</i>	UN SDGs in chemistry education <i>Constable</i>
3:30-3:50		Opportunities for redesigning stereolithography printing systems <i>Scholes</i>	Cooperative catalysis for hydrogenation reactions – towards replacing ruthenium with earth abundant metals <i>(Not Available On Demand)</i> <i>Mark</i>	Utilizing green principles for industrially relevant cysteine desulfurization <i>Mendoza</i>	Merging green and safe: Principles of safe synthetic chemistry <i>Merlic</i>	Designing a 100% biological detergent <i>Peters</i>	Green chemistry curriculum development in South Africa <i>Van Zyl</i>	High-impact practices as a tool for integrating systems thinking and the UN SDGs into the chemistry classroom <i>Lasker</i>
3:50-4:10		Protein-based resins for vat photopolymerization <i>Nelson</i>	Live Discussion	Watts, photons, volts, and flow: Using microwave heating, photocatalysis, electrochemistry, and continuous-flow processing as tools for greener chemistry <i>(Not Available On Demand)</i> <i>Politano</i>	Safe and practical synthesis of diazeniumdiolates and the application for synthesis of MK-8150 <i>Zhong</i>	Improvement of PolyHydroxyUrethane properties via novel hybrid routes <i>Ecochard</i>	Global green chemistry initiative: Brazilian experience of raising the awareness <i>Neto & Kuriyama</i>	Connecting project-based learning in organic chemistry lecture and laboratory to research engagement focused on systems thinking, green and sustainable chemistry, and the UN sustainable development goals <i>Brush</i>
4:10-4:30		Live Discussion	Live Discussion	Direct functionalization of inert C-H and C=C bonds using cheap, and earth-abundant copper and zinc catalysts supported by fluorinated ligands <i>(Not Available On Demand)</i> <i>Ponduru</i>	Live Discussion	Post-treatments after hydrothermal carbonization: From organic wastes to solid and liquid biofuels <i>Ischia</i>	Global green chemistry initiative – what have we learned? <i>Umanzor, Mellor, Dunjic, Neto & Kuriyama</i>	Live Interactive Workshop: connecting green chemistry, systems thinking and the UN sustainable development goals to the undergraduate chemistry curriculum <i>Brush & Lasker</i>
4:30-4:50	Live Discussion							
4:50-5:30	#gcande Twitter Happy Hour							

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Thursday, June 18

11:00-11:10	Welcome Remarks								
11:10-12:00	Keynote presented by Jillian Goldfarb: "Collaborative Approach to Systemic Design of Green Materials in Limited Data Environments: Insights to Advance Research in Light of COVID-19 Restrictions"								
12:00-12:55	Poster Session & Exhibits								
Session	Carbon Dioxide: Systems-Inspired Design on Recovery and Re-use	Successful International Green Chemistry Case Studies in Emerging Economies	Pathways to New Products Using Lignocellulosic Feedstocks	Toward Systematic Design of Sustainable Separation Processes	Innovations in Analytical Chemistry Applications to Enable Greener Process Design	Careers in Green Chemistry & Engineering	Information Driving Greener Design: Uncertainty in Estimating Systems Accuracy and its Impact on Decision-Making	Unlocking the Power of Enzymes: Biocatalysis as an Enabling Tool in Complex Molecule Synthesis	
Presider/Organizers	Joseph Sabol	Paul Anastas & Karolina Mellor	Adelina Voutchkova, Jason Locklin, Peter Deuss & Vikram Yadama	Robert Giraud & Kirti Yenkie	Christine Aurigemma & William Farrell	Laura Reyes & Natalie O'Neil	Jakub Kostal, Emma Lavoie & Hans Plugge	Cynthia Hong & Kevin Maloney	
1:00-1:05	Introductory Remarks								
1:05-1:25	Using waste carbon feedstocks to produce chemicals <i>Nesbitt</i>	Successful green chemistry case studies in India through Green Chemistry Network Centre (GCNC) <i>Sharma</i>	Improving mild organosolv lignin extraction by lignin modification and flow-through extraction <i>Zijlstra</i>	Separation network synthesis: New methods for new problems <i>Yenkie</i>	Approaches to reduce the environmental impact of medicinal chemistry sample purification <i>Barnhart</i>	Chemistry career- going further up the pipe <i>Van Bergen</i>	Incorporating New Approach Methodologies (NAMs) into chemical assessment: Best practices in interpreting and reconciling conventional and NAM-centric toxicology <i>Whittaker</i>	Using software to traverse the sequence activity landscape in the engineering of enzymes <i>(Not Available On Demand) Alvizo</i>	
1:25-1:45	Electro-swing adsorption for high-efficiency carbon capture <i>Voskian</i>	Scale-up and commercialization of green chemistry technologies in SMEs: Sharing constraints through case studies <i>Mehta</i>	Wood Biorefineries based on pulping in deep eutectic solvents <i>Schuur</i>		How greener and sustainable chemistry relates to accelerated clinical candidates <i>Aurigemma</i>	Synthetic chemistry to green chemistry and sustainability: My journey <i>Ruffing</i>	Making safety decisions with limited data: A world of uncertainty <i>Gould</i>		
1:45-2:05	Oceans full of possibilities – a quest for polymers from CO2 <i>Schuler</i>	Integrating green chemistry into organic chemistry curriculum in Ethiopian institutions <i>Weldegirma</i>	Lignin-first fractionation of softwood lignocellulose using a mild dimethyl carbonate and ethylene glycol organosolv process <i>De Santi</i>	Recovery of DES by membranes using organic solvents <i>Roy</i>	Life cycle analysis and EHS parameters of supercritical fluid chromatography systems <i>Fitch</i>	Careers in intellectual property law <i>Renison</i>	Use of the Threshold of Toxicological Concern (TTC) approach to address uncertainty in alternatives assessment <i>Brown</i>	Ketoreductase (KRED) enzymes: A versatile and green tool for setting challenging stereocenters <i>Benkovics</i>	
2:05-2:25	Live Discussion	Green hydrogel nanocomposites as calcium fertilizer and soil conditioner <i>Zaki</i>	Designer ionic liquids for the integrated upgrading of cellulosic biomass to furans <i>Brucato</i>	Live Discussion	Green chemistry crystal ball: How to enable green chemistry before laboratory work begins <i>(Not Available On Demand) Piper</i>	Happiness through green chemistry: How a non-linear career path led to personal contentment <i>Laviska</i>	Big data means big challenges for managing uncertainty in toxicity predictions <i>Rolands</i>		
2:25-2:45		Live Discussion	Live Discussion		Live Discussion	Live Discussion	Live Discussion	Live Discussion	Live Discussion
2:45-3:05	Networking Activities								
3:05-3:10	Introductory Remarks								
3:10-3:30	Electroorganic utilization of carbon dioxide paired with wastewater treatment <i>(Not Available On Demand) Klinkova</i>		Replacing non-renewable carbon with bio-derived alternatives <i>(Not Available On Demand) Sutton</i>	Process and adsorbent for separating ethanol and associated oxygenates from a biofermentation system <i>Sharma</i>	On-line spectroscopic PAT methods for in process controls and release testing in the continuous manufacture of a commercial drug product <i>Jensen</i>	Advocacy, education and research to build a circular bioeconomy for plastics <i>Chile</i>	Quantitative variability in repeat dose toxicity studies: Implications for scientific confidence in new approach methodologies <i>Friedman</i>	Aldolase-based chemoenzymatic platform for the synthesis of chiral organofluorines <i>Fang</i>	
3:30-3:50	Comparison of the process and economic analysis between carbon dioxide utilization and integrated carbon dioxide utilization <i>(Not Available On Demand) Qiao</i>			Development of adsorption processes for the separation of close-boiling mixtures <i>(Not Available On Demand) Ajenifuja</i>	Deep dive into a telescoped reaction in pharmaceutical development using in-line FTIR <i>Wasyluk</i>	What's a career anyway? How about a life? <i>Engendahl</i>	Visual characterization of uncertainty in chemical risk assessment <i>Goyak</i>		
3:50-4:10			Biobased aromatics and polymers from lignocellulosic biomass <i>He</i>		Computer-assisted modeling in analytical and preparative chromatography settings: A green approach to sustainable process research and development <i>Hicks</i>		Decision analytics and uncertainty analysis for informing green chemistry decisions: Discussion of tools and case studies <i>(Not Available On Demand) Faustman</i>	Biocatalysis from biosynthesis: Enzyme discovery and characterization <i>(Not Available On Demand) Tang</i>	
4:10-4:30	Live Discussion		Synthesis of HHD and HHD-derived chemicals from HMF <i>Tin</i>	Systematic design and life-cycle analysis for synthesis of solvent recovery framework <i>Chea</i>	Roundtable discussion: Innovations in analytical technologies to provide transformational and sustainable impacts for medicinal, process and manufacturing chemistry <i>(Not Available On Demand) Farrell</i>	Live Discussion	Communicating uncertainty to aid decision-making <i>Davis</i>		
4:30-4:50				Live Discussion	Live Discussion		Live Discussion	Live Discussion	Live Discussion
4:50-5:30	#gcande Twitter Happy Hour								

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Friday, June 19

11:00-11:10	Welcome Remarks						
11:10-12:10	Keynote Addresses: <ul style="list-style-type: none"> 11:10am – 11:30am - Jonas Baltusaitis: “Sustainability of the Global Nitrogen Cycle: Anthropogenic Activity Contributed Challenges and Green Engineering Enabled Solutions” 11:30am – 11:50am - Katalin Barta: “Cleave and Couple: Embracing complexity in renewable resources 11:50am – 12:10pm - Feng Wang: “Photocatalytic Conversion of Biomass and its Derivatives” - (Not Available On Demand) 						
12:10-12:30	Keynote Address: Live Discussion						
12:30-12:55	Exhibits - Friday						
Session	Undergraduate Context Session	Sustainable Industrial Products, Processes, and Systems	General Green Chemistry & Engineering	Earth-Abundant Metal Catalysis	Achieving System-Wide Collaboration by Design	Green by Design: Medicinal Chemistry to Pharmaceutical Manufacturing	Pathways to New Products Using Lignocellulosic Feedstocks
Presider/Organizers	Reuben Hudson & Julian Silverman	Se Ryeon Lee, Kristin Nuzzio & Chad Landis	David Constable & Rafael Luque	Neil Strotman & Bradley Gates	Saskia Van Bergen, Robert Giraud, Amy Cannon, Laura Reyes & Paul Thornton	Amy Dounay & Jozef Stec	Adelina Voutchkova, Jason Locklin, Peter Deuss & Vikram Yadama
1:00-1:05							
1:05-1:25	Capturing students' imaginations for new sustainable polymers <i>Wissinger</i>	Process changes for energy savings in automotive coatings (Not Available On Demand) <i>Landis</i>	Silica production from biopolymers (Not Available On Demand) <i>Curley</i>	Nickel-catalyzed stereoselective cross-coupling and cross-electrophile coupling reactions <i>Jarvo</i>	The ZDHC Roadmap to Zero Programme - Building a global ecosystem and solutions to transform chemicals management in the fashion supply chain <i>Echols</i>	Synergistic catalysis: A novel method for the synthesis of chiral compounds (Not Available On Demand) <i>Sibi</i>	Bio-based and biodegradable glutarate polyesters from lignocellulosic biomass <i>Locklin</i>
1:25-1:45	Value from lignocellulosic biomass; a focus on lignin <i>Deuss</i>	Sustainable polyurethane foam initiative: Sugarcane biomass to bio-based medical and cosmetic products <i>Jayakody</i>	Extracting keratin protein from animal hair without any chemicals for industrial applications <i>Tasaki</i>		Collaborating across disciplines to enable better molecular design <i>O'Neil</i>		Selective lignin defunctionalization to obtain high value products <i>Zhang</i>
1:45-2:05	Green chemistry? Systems thinking? Where do we go from here? <i>Brush</i>	Synthesis and optimisation of non-toxic carboxymethyl gum for industrial applications using Taguchi's approach <i>Sharma</i>	Live Discussion	Earth-abundant catalysis research in pharma: Highlights from the NPMC <i>Michael Haibach, David Bernhardtson, Frederic Buono & Bo Qu</i>	Scaling a startup through system-wide collaboration <i>Krumm</i>	Development of multitarget inhibitors for the treatment of chronic pain: Microwave-assisted synthesis, biological evaluation and molecular modeling studies (Not Available On Demand) <i>Pecic</i>	Valorization of lignin through carbon base materials – batteries, supercapacitors and biomedical devices <i>Rubio</i>
2:05-2:25	Follow your passion not your program <i>O'Neil</i>	Live Discussion			Live Discussion	Green solvents for all solid-phase peptide synthesis (SPPS) steps <i>de la Torre</i>	Environmental and economic assessment of producing polylactic acid from residual woody biomass in the U.S. Pacific Northwest <i>Pierobon</i>
2:25-2:45				Live Discussion		Live Discussion	
2:45-3:05	Networking Activities						
3:05-3:10	Introductory Remarks						
3:10-3:30	Live Panel Discussion: Undergraduate Context Session	Use of green chemistry in the design and synthesis of the picolinamide fungicide, florypicoxamid <i>Babij</i>	Artificial intelligence driven catalyst design for lignin degradation based on inverse molecular design theory <i>Xiao</i>	Characterizing catalytic activation processes: In situ studies of a catalyst for recycling gaseous carbon dioxide <i>Ghoussoub</i>	An effective collaboration between the ACS Green Chemistry Institute, the pharmaceutical industry, and beyond <i>Martinez</i>	Synthesis or substitution? Approaches to the efficient preparation of N-(Hetero)Aryl Piperidines (Not Available On Demand) <i>Sather</i>	The inconvenient truth about single-use packaging is also an opportunity <i>Williams</i>
3:30-3:50		Commercializing safer alternatives to hydrofluoric acid <i>Thomson</i>	Application study of the humins as recyclable by-product of isosorbide (Not Available On Demand) <i>Im</i>	Magnetite supported earth abundant metal complexes as efficient nanocatalysts for boosting industrially significant transformations and degradation of environmental contaminants <i>Dutta</i>	Assessing the biodegradation and compostability of flexible packaging – collaborations between the New Materials Institute and the industry supply chain <i>Locklin</i>	Green chemistry at Pfizer : Case studies from medicinal chemistry to development <i>Paul Richardson</i>	
3:50-4:10		Live Discussion	Mitigating biofouling on reverse osmosis membranes: Applying green preservatives to biofilm treatment <i>Curtin</i>	3D porous NiFe nanofoams as highly efficient oxygen evolution catalysts in anion exchange membrane electrolyzer (Not Available On Demand) <i>Zhu</i>	Retail collaboration to advance green chemistry: Lessons learned from the Green Chemistry & Commerce Council Retailer Leadership Council <i>Edwards</i>	Convergence of novel chemical methods and advanced engineering principles: case studies for the implementation of continuous manufacturing (Not Available On Demand) <i>Beaver</i>	Live Panel Discussion: Pathways to New Products Using Lignocellulosic Feedstocks
4:10-4:30			Live Discussion	Live Discussion	Live Discussion	Live Discussion	
4:30-4:50						Live Discussion	
4:50-5:30	#gcande Twitter Happy Hour						