

**American Chemical Society
Division of Environmental Chemistry**

Call for Papers

254th National Meeting & Exposition

Washington, DC – August 20-24, 2017

Abstract Submission Deadline: **March 17, 2017**

Dear Colleagues,

We invite you to share your recent research and results in the Division of Environmental Chemistry of the American Chemical Society at the 254th ACS National Meeting in Washington, DC, August 20-24, 2017.

ENVR Fall Program Chair: Jillian Goldfarb, Ph.D.

Division of Materials Science & Engineering, Department of Mechanical Engineering, Boston University

Email: jilliang@bu.edu

Abstract Submission Deadline: **March 17, 2017**. Please submit abstracts to the Division of Environmental Chemistry at <http://MAPS.ACS.org>. Abstracts accepted for oral and/or poster presentation in each symposium unless otherwise noted. Symposium details are available on the ENVR website: www.acsenvr.com.

ACS Thematic Symposia: Chemistry's Impact on the Global Economy

Economic Impact of Green Chemistry

Organized by: Bethany Drake (drake.bethany@epa.gov); Tracy Williamson (williamson.tracy@epa.gov); Robert Meyers (meyers.robert@epa.gov); David Widawsky (widawsky.david@epa.gov)

This symposium brings together various stakeholders to discuss the economic advantages and challenges of implementing Green Chemistry Technology or efforts, highlighting resources and tools available to scientists to address green chemistry needs.

Global Economic Impact of Environmental Health Research: A Case Study of the NIEHS Superfund Research Program

Organized by: Heather Henry (henryh@niehs.nih.gov); Kelly Pennell (kellypennell@uky.edu)

This symposium will demonstrate the global economic impact of basic research programs using the NIEHS Superfund Hazardous Substance Research and Training Program (SRP) as a case study. The session will include several examples of cost and time savings due from bioremediation, in situ chemical oxidation, and novel monitoring assays/technologies.

Environmental, Social, and Economic Impacts of Aged/Transformed Nanomaterial-enabled Consumer Products

Organized by: Soryong Chae (chaesg@ucmail.uc.edu); Endalkachew Sahle-Demessie (Sahle-Demessie.Endalkachew@epa.gov); Nora Savage (nosavage@nsf.gov); Honglan Shi (honglan@mst.edu)

Engineered nanomaterials have been widely incorporated into consumer products such as textiles, personal care products, cosmetics, sporting goods, sunscreens, membrane filters, paints & pigments, electronics & optics, automotive, catalysts, food and beverage, appliances, and goods for children. This symposium will focus on the environmental, social, and economic impacts of aged/transformed ENMs released from consumer products.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Materials and Processes for Environmental Applications

Heterogeneous Catalysis for Environmental Remediation and Energy Applications

Organized by: Aditya (Ashi) Savara (savaraa@ornl.gov); Alex Orlov (Alexander.orlov@stonybrook.edu)

This symposium will highlight new developments in heterogeneous catalysis geared towards protecting the environment and human health. It will focus on application of catalysts to environmental remediation, ranging from vehicle emissions to reducing indoor air pollution to reducing water pollution.

Impact of Materials, Surface Chemistry and Modifications on Biofilm Formation in Environmental Remediation and Engineering Applications

Organized by: Birthe Venø Kjellerup (bvk@umd.edu); Nancy Lin (Nancy.lin@nist.gov)

Co-sponsored by: AEESP

Microbes can colonize materials and flourish as biofilms in complex environments, causing obstruction and failure of engineered structures. Yet, biofilms are applied for enhanced bioremediation of groundwater and sediment contaminated with organic pollutants as well as energy and nutrient recovery from wastewater via microbial fuel cells. The promising aspects of biofilm formation on novel materials and the present state-of-the-art in surface technology will be discussed in order to identify opportunities for directing and promoting beneficial biofilm formation.

Surface Chemistry of Biochar and Its Applications in Environmental and Related Systems

Organized by: Wei-yin Chen (cmchengs@olemiss.edu); Ruey Ann Doong (radoong@nctu.edu.tw); Mao Hoon Fan (mfan@uwoyo.edu); C. P. Huang (huang@udel.edu); Jerzy Leszczynski (jerzy@icnanotox.org); Jillian Goldfarb (jilliang@bu.edu)

Biochar finds applications in water and wastewater treatment, food production, in soil conservation and fertility improvement, and energy production. However, information on the preparations and characterizations of biochar and their relation to water, food and energy application are lacking. This symposium will focus on the surface chemistry of biochar and its applications to multimedia environments.

Assessing, Mitigating, and Preventing Environmental Impact

Advances in Environmental Analytical Methods for EPA Compliance Reporting and Exposure Risk Assessment

Organized by: William Lipps (wclipps@shimadzu.com); Brahm Prakash (brprakash@shimadzu.com)

At this symposium, experts and method developers will present their work on new analytical methods soon to be, or recently proposed for EPA compliance reporting, as well as advances in detection and monitoring for improved risk assessment.

Changes in Chemical Risk Assessment under Amended TSCA - Approaches and Implementation

Organized by: Laurence Libelo (Libelo.Laurence@epa.gov); Marcella Card (Card.Marcy@epa.gov); Edmund Wong (Wong.Edmund@epa.gov); Tala Henry (Henry.Tala@epa.gov)

Implementation of amended TSCA is an on-going process with potential evolution in assessment approaches in the areas of fate, exposure, hazard, and risk assessment. The objective of this Special Symposium is to inform the scientific community of how assessments are conducted and to highlight changes in risk assessment approaches with the implementation of amended TSCA.

Ecological and Human Health Impacts of Emerging Environmental Contaminants

Organized by: Xiaoping Pan (panx@ecu.edu); Baohong Zhang (zhangb@ecu.edu); Selim Mustafa (selimm@ecu.edu)

Environmental contaminants targeted in this symposium can be of natural or synthetic origin. We invite presentations addressing all issues of emerging environmental contaminants, including transport and fate through environmental compartments: such as air, water, soil/sediments; impacts on ecosystem, organisms, and human health from exposure to these chemicals.

Food Safety and Analysis: Chemical Contamination Assessment

Organized by: (Min Li), li@calu.edu; Hongmei Chen (chen.hongmei.odu@gmail.com); Rufus Chaney (rufuschaney@verizon.net)

This symposium will focus on current and future trends in risk assessment in food safety and emerging technologies in analytical and separation methodologies in food contaminants analysis. The challenges and gaps in food safety and analysis will be identified in the symposium.

Molecular Foundry for Safer Chemicals: At the Crossroads of Chemistry and Toxicology

Organized by: Bryan Brooks (Bryan_Brooks@baylor.edu); Adelina Voutchkova (avoutchkova@gwu.edu)

This session showcases efforts to synergistically apply chemistry and toxicology in order to predict toxicity and/or design chemicals with minimal probability for human and ecotoxicity.

Monitoring Water Quality and Infrastructure to Prevent Future Flints

Organized by: Satinder Ahuja (satahuja@atmc.net); Bommanna Loganathan (bommanna.loganathan@gmail.com)

This symposium will discuss various methodologies to monitor ultratrace contaminants – both natural and anthropogenic – in public water supplies, investigate impact of infrastructure on water quality, and recommend corrective steps to prevent future Flints.

Trace Organic Contaminants (TrOCs) in Aquatic Systems: Advancements in Monitoring and Remediation

Organized by: Rachel Brennan (rbrennan@enr.psu.edu); Michael Shreve (mjs697@psu.edu)

Trace organic contaminants (TrOCs; e.g. pharmaceuticals, personal care products, natural hormones, and industrial chemicals) are present in wastewater, aquatic environments, and finished drinking water. This session will showcase the latest developments in chemical and biochemical methods for monitoring and mitigation/remediation of TrOCs in natural and man-made aquatic systems.

Environmental Fate and Transport

Fate, Transport and Remediation of Radionuclides in the Environment

Organized by: Vasileios Anagnostopoulos (vanagnos@fiu.edu); Sarah Saslow (sarah.saslow@pnnl.gov); Patricia Paviet (Patricia.Paviet@Nuclear.Energy.Gov)

This session will highlight recent developments in radionuclide (e.g. Tc-99, I-129, actinides) fate and transport in the environment and emerging remediation strategies. Session will also focus on how comingled contaminants and local biogeochemistry impact environmental mobility and remediation and linking molecular-scale research to field scale applications relevant to global nuclear waste sites.

Iron and Manganese Oxides: Their Formation, Structure, Reactivity, and Applications

Organized by: Yandi Hu (yhu11@uh.edu); Huichun zhang (hjzhang@temple.edu); Mengqiang Zhu (mzhu6@uwyo.edu); John Fortner (jfortner@wustl.edu); David Waite (d.waite@unsw.edu.au)

This symposium seeks contributions that advance the current understanding of the biogeochemical behavior of Fe and Mn (oxyhydr)oxides in natural environments as well as their environmental engineering applications.

Metal Oxidation-Mediated Formation and Consequences of Reactive Oxygen Species in Natural or Engineered Aquatic Systems

Organized by: John Ferry (ferry@sc.edu); Martial Taillefert (mtaillef@eas.gatech.edu); Meagan Smith (meaganls@email.sc.edu)

This symposium will present new research focused on the evolution of reactive oxygen species (ROS) in aquatic environments, with an emphasis on superoxide, hydrogen peroxide and hydroxyl radical resulting from the oxidation of transition metals by dioxygen and peroxides. The formation and structure of organic oxidation products and their role as free radical chain carriers will be presented.

Multi-Phase Environmental Chemistry of Aerosols

Organized by: Alexander Laskin (alexander.laskin@pnnl.gov); Sergey Nizkorodov (nizkorod@uci.edu); Sherri W. Hunt (Hunt.Sherri@epa.gov)

This symposium will cover recent advances in the cross-disciplinary areas of environmental chemistry of aerosols focused on the multi-phase reactions of gases, aerosols and environmental interfaces and their roles in climate forcing and health issues.

Environmental Nanotechnology: Applications and Implications

Measurements and Methods in Environmental Nanotechnology

Organized by: Elijah Petersen (elijah.petersen@nist.gov); Bryant Nelson (bryant.nelson@nist.gov); Shannon Hanna (shannon.hanna@nist.gov); Monique Johnson (monique.johnson@nist.gov); Antonio Montoro Bustos (antonio.montorobustos@nist.gov); Christopher Sims (christopher.sims@nist.gov)

The goal of this symposium is to keep researchers updated on the current research progress related to experimental approaches and method development in environmental fate, transport, and risk assessment of nanotechnology.

Nano-Enabled Water Treatment Technologies: Applications and Implications

Organized by: Anjali Mulchandani (anjalin@asu.edu); Camilah Powell (cdp5@rice.edu); Natalia Hoogesteijn von Reitzenstein (natreitzen@asu.edu); Michael S. Wong (mswong@rice.edu); Kiril D. Hristovski (kiril.hristovski@asu.edu)

The symposium focuses on environmental applications and implications of nanomaterials when they are used in nano-enabled water treatment systems, including nanomaterials for contaminant adsorption, magnetic nanomaterials, photocatalytic and solar-enabled nanomaterials, incorporation of nanomaterials into membranes, prevention of biofouling, safety and sustainability of nanomaterials and their environmental implications when used in water treatment.

Addressing Challenges in Food, Energy and Water

Advances and Challenges at the Food-Energy-Water Nexus

Organized by: Indranil Chowdhury (indranil.chowdhury@wsu.edu); Dionysios (Dion) D. Dionysiou (dionysios.d.dionysiou@uc.edu); Yuehe Lin (yuehe.lin@wsu.edu); Soryong Chae (chaesg@ucmail.uc.edu); Satinder Ahuja (sutahuja@atmc.net)

Co-sponsored by: CEI

This symposium welcomes research papers that describe recent advances in food-energy-water nexus, including water efficiency in energy and agricultural sectors, energy efficient water treatment and

distribution, water reuse in energy generation processes and irrigation, management of agricultural runoffs, and production of energy and value-added products from waste and wastewater, sensors for water and food quality monitoring, integrated modeling for water management, and food-energy-water challenges in the developing world.

Advances and Challenges in Separation and Mixing of Salts for the Sustainable Production of Food, Energy and Water

Organized by: Soryong Chae (chaesg@ucmail.uc.edu); Shihong Lin (shihong.lin@vanderbilt.edu); Ngai Yin Yip (n.y.yip@columbia.edu); David Jassby (djassby@enr.ucr.edu); Chan-Soo Kim (damulkim@kier.re.kr); Jin-Soo Park (energy@smu.ac.kr); James Landon (james.landon@uky.edu); Marta Hatzell (marta.hatzell@me.gatech.edu)

Desalination of seawater and brackish groundwater is being considered or is becoming a more and more attractive solution to fresh water scarcity in many countries. On the other hand, a significant potential to obtain clean energy exists from mixing water streams with different salt concentrations. This symposium will focus on recent global advances and challenges in the separation and mixing of salt streams for the sustainable production of water, energy, and food.

Advances in Chemical Oxidation for Water and Wastewater Treatment Systems

Organized by: Yang Deng (dengy@mail.montclair.edu); Weihua Song (wsong@fudan.edu.cn)

Chemical oxidation plays a vital role in potable water treatment, water reuse, and wastewater treatment. Conventional and advanced oxidation processes are developed to address various contaminants, but likely produce undesirable byproducts. This symposium serves as a forum for the latest research advancing chemistry and technologies pertinent to chemical oxidation in water and wastewater systems.

Electrochemical Technologies for Water Purification

Organized by: Anh Pham (a.pham@carleton.ca); Edward Roberts (etprober@ucalgary.ca); Brian Chaplin (chaplin@uic.edu); Justin Jasper (jjasper@caltech.edu); James Barazesh (Jbarazesh3@berkeley.edu)

Symposium on advancements in the application of electrochemical processes for treatment of drinking water, municipal and industrial wastewaters, and for desalination, including advanced oxidation processes, electrochemical reduction, formation of disinfection byproducts, and novel electrode materials.

Green Chemistry and Engineering

Environmental Applications of Liquid Phase Catalysis for Green Chemical Processes of Renewable Materials

Organized by: Michael Timko (mttimko@wpi.edu); Aaron Deskins (nadeskins@wpi.edu); Jesse Bond (jqbond@syr.edu)

Abstracts are invited on all areas of liquid-phase catalysis for green chemical processes for renewable materials, including experimental and theoretical studies of catalytic stability, activity, product selectivity, mechanism, and reactor design, including reactive separations.

Green Chemistry and the Environment

Organized by: Sherine Obare (Sherine.obare@wmich.edu); Alina Balu (qo2balua@uco.es); Steven DeVito (Devito.steve@epa.gov); Rafael Luque (q62alsor@uco.es)

The symposium will focus on green processes for wastewater treatment, synthesis using green methods, safe industrial practices, waste valorization, developing alternative energy and the use of green solvent.

Engaging the Future through Interdisciplinary Discussions and Education

Environmental Justice: Role and Impact of Diversity on Environmental Stewardship *Organized by: Jerry Sarquis (sarguijl@miamioh.edu), Armando Rivera (riveraa2@elac.edu), Michael Santiago (Michael.santiago@ars.usda.gov)*

Environmental stewardships and effect on population diversity in different regions of the geosphere. Topics will include soil, air and water contamination, changes in biodiversity of different regions, and toxicology, among others. The relationship between understanding the chemistry of these issues and environmental justice will be discussed as well.

Science and Perception of Climate Change

Organized by: Elke Schoffers (Elke.Schoffers@wmich.edu) and Sherine Obare (Sherine.Obare@wmich.edu)

Climate change affects scientists and non-scientists worldwide regardless of their “beliefs” in the science behind it. This interdisciplinary symposium brings together scholars with expertise in chemistry, chemical education, green chemistry, sustainability, business, sociology and political science. Presentations and concluding panel discussion will focus on navigating a path forward in this intensely polarized debate.

Undergraduate Environmental Chemistry and Sustainability

Organized by: Michael Berger (bergerm@simmons.edu) and Lindsey Welch (lawelch@cedarcrest.edu)

This symposium highlights pedagogical approaches for engaging undergraduate students in various aspects of environmental science and sustainability. Possible areas involve undergraduate research, service learning, study abroad, and interdisciplinary curricula and co-curricula programs. Potential areas of interest include analytical chemistry, phytoremediation, biosorbents, climate change, geochemistry, water quality, and alternative energy.

ENVR Poster Session

Division of Environmental Chemistry General Poster Session

Organized by: Jillian Goldfarb (jilliang@bu.edu)

Abstracts in all areas of Environmental Chemistry and Engineering are welcome in the Division’s Poster Session. This is an interactive session design to encourage dialogue among scientists while sharing highlights of new research.

ENVR Cosponsored Symposia

[ANYL] **Chemistry at the Front Lines: Applications of Analytical Chemistry to Environmental Crisis** (Cosponsor: ENVR)

Organized by: Michael Link, Ryan Fulgham

[AGFD] **Nanoscale Sensing in Foods & Other Complex Media** (Cosponsors: INOR, ANYL, COLL, ENVR)

Organized by: Timothy Duncan, Bosoon Park, Yun Wang, Rebecca Weiner

[CELL] **Recent Advances towards the Bioeconomy** (Cosponsors: ENFL, CARB, AGFD, ENVR)

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Economic Impact of Green Chemistry

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The first Presidential Green Chemistry Challenge Awards were presented by EPA over 20 years ago, and many of the winning technologies have significant impact in the US and beyond. While outstanding examples of the breadth and depth in the green chemistry space, they represent only a small subset of green chemistry technologies online in the US and globally. This symposium will allow practitioners and stakeholders to tell their unique story about the impact of their green chemistry technology or efforts. It will bring together scientists from the academic, industry and government sectors to discuss advantages and challenges, focusing particularly on economics and the market. The symposium will also identify some of the resources and tools available to scientists that address green chemistry needs.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Bethany Drake
drake.bethany@epa.gov
US EPA

Tracy Williamson
williamson.tracy@epa.gov
US EPA

Robert Meyers
meyers.robert@epa.gov
US EPA

David Widawsky
widawsky.david@epa.gov
US EPA

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Call for Papers**Global Economic Impact of Environmental Health Research: A Case Study of the NIEHS Superfund Research Program**

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It is a challenge to assess the economic impact of research, particularly fundamental research - because of the time lag from a research discovery to its application. Nonetheless, it is imperative to connect scientific innovation to its resulting market impact, both nationally and globally, to reinforce the need for basic research programs. This symposium highlights the global economic impact of interdisciplinary environmental health research, using as a case study the National Institute of Environmental Health Sciences (NIEHS) Superfund Hazardous Substance Research and Training Program (SRP). Launched in 1987 under the Superfund Amendment and Reauthorization Act (SARA), SRP has funded interdisciplinary science integrating biomedical and toxicological sciences with that of environmental science and engineering. The program's mandates include technology-driven goals such as developing basic biological, chemical, and physical methods to reduce the amount and toxicity of hazardous substances as well as methods and technologies to detect hazardous substances in the environment. Now in its 30th year, SRPs support in fundamental research has resulted in significant research breakthroughs, the establishment of international scientific networks for the application of novel findings, and real-world tests yielding significant market impact. For example, SRP funded research in in situ remediation has led to cost savings at contaminated sites; rapid screening technologies, such as antibody-based monitoring assays, have saved time and cost in site assessment; and the development of novel materials, such as nanotechnology-based platforms, are showing potential for impact on the global market. The symposium features research leading to significant cost and time savings for site remediation and monitoring; and will touch on the potential global economic impact "including cost benefits for improved public health" resulting from innovative technologies.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Heather Henry
henryh@niehs.nih.gov
National Institute of Environmental Health
Sciences

Kelly Pennell
kellypennell@uky.edu
University of Kentucky

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Call for Papers**Environmental, Social, and Economic Impacts of Aged/Transformed Nanomaterial-enabled Consumer Products**

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Ever increasing use of engineered nanomaterials (ENMs) in consumer products has resulted in their inevitable release into the environment, either as the original (as-manufactured) ENMs, or, more likely, as transformed ENMs of societal nanomaterial-enabled goods. Potential environmental risks associated with emerging nanotechnologies are linked to aging and transformation of nanoparticles released from consumer products through waste disposal as well as possible accumulation of nanoparticles in natural and engineering systems. This symposium welcomes research papers that describe recent advances in environmental, social, and economic impacts of aged/transformed ENMs released from consumer products. The topics that would be covered in this session are, but are not limited to:

- Applications of nanomaterials in environment and health
- Fate & transport of ENMs released from consumer products
- Toxicology of aged nanomaterials
- Risk assessment of aged/transformed ENMs
- Monitoring and characterization of aged/transformed ENMs
- Biological and environmental interactions of aged/transformed ENMs
- Development of multi-component nano-devices
- Social and economic impacts of nanotechnology

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Soryong Chae
chaesg@ucmail.uc.edu
University of Cincinnati

Endalkachew Sahle-Demessie
Sahle-Demessie.Endalkachew@epa.gov
US EPA

Nora Savage
nosavage@nsf.gov
National Science Foundation

Honglan Shi
honglan@mst.edu
Missouri University of Science and Technology

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Call for Papers

Heterogeneous Catalysis for Environmental Remediation and Energy Applications

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This symposium will highlight new developments in heterogeneous catalysis geared towards protecting the environment and human health. It will focus on application of catalysts to environmental remediation, ranging from vehicle emissions to reducing indoor air pollution to reducing water pollution. Topics covered in this symposium will include, but are not limited to:

- Heterogeneous catalysis for air and water treatment (indoor and outdoor)
- Catalysis for greenhouse gas reduction and usage
- Nanocatalysis for fuel processing and fuel cells
- Automotive and combustion exhaust treatment
- Heterogeneous catalysis for hydrogen production
- Photocatalysis and electrocatalysis for environmental protection
- Catalytic membrane materials for separation and reaction
- Catalytic hydrodechlorination

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Aditya (Ashi) Savara
savaraa@ornl.gov
Oak Ridge National Lab

Alex Orlov
Alexander.orlov@stonybrook.edu
SUNY Stonybrook

Note: Papers on liquid phase catalysis for Green Chemistry processes should be submitted to the “**Environmental Applications of Liquid Phase Catalysis for Green Chemical Processes of Renewable Materials**” symposium.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers**Impact of Materials, Surface Chemistry and Modifications on Biofilm Formation in Environmental Remediation & Engineering Applications**

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The ability of microbes to colonize materials and flourish as biofilms in complex environments has for decades caused obstructions and failures of engineered structures, which impact safety, result in high repair costs, and have detrimental health consequences by causing failure of medical devices and implants. However, these same properties have biofilms being widely applied for enhanced bioremediation of groundwater and sediment contaminated with organic pollutants and for energy and nutrient recovery from wastewater via microbial fuel cells.

Application of modified surfaces and novel coatings can enhance biofilm formation and improve characteristics, while other surfaces can be engineered to resist biofilm formation for an extended period of time. The promising aspects of biofilm formation on novel materials and the present state-of-the-art in surface technology will be discussed in order to identify opportunities for directing and promoting beneficial biofilm formation. Topics covered in this session include, but are not limited to:

- Biofilm formation and the race for the surface;
- Modifying surface properties to promote or to avoid biofilm formation;
- The impact of surfaces on the activity of biofilm bacteria;
- Measurements to characterize biofilm response to surface properties;
- Future prospects in material and surface coating technologies to prevent or enhance biofilm formation.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Birthe Venø Kjellerup
bvk@umd.edu
University of Maryland at College Park

Nancy Lin
Nancy.lin@nist.gov
NIST

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Biochar has gained much attention due to its unique physical, chemical and surface chemical properties. It is studied extensively as a soil conditioner, for stormwater and wastewater treatment, air quality control and energy applications. Biochar can be synthesized from a variety of carbonaceous materials and procedures. Though it has been extensively applied in agricultural and environmental systems across scales, it is time to assess the technological aspects of biochar and its future direction, especially in the remediation of water. Many questions remain. For example, how does the raw material affect the reactivity of biochar? For the same raw materials, how do preparation conditions, pretreatment procedures and synthesis methods affect the reactivity of biochar? How do environmental and aging conditions affect reactivity? Is there a need to establish standard procedures for the characterization of the surface, physical, and biological properties of biochar? What are current technical needs to enhance the reactivity of biochar for water and agricultural applications of biochar? What is the lifecycle of biochar with respect to environmental applications? This symposium is organized to exchange past experience, share current progress, and map out new directions in biochar research with an emphasis on environmental applications. Topics of interest include, but are not limited to:

- Relationship between types of raw materials and surface reactivity of biochar.
- Effects of pretreatment and preparation procedures on the reactivity of biochar.
- Surface characterizations of biochar.
- Molecular surface chemical processes of biochar.
- Biochar as an electron donor.
- Chemical interactions between metal ions and biochar.
- Interactions between micronutrients and biochar.
- Agricultural benefitions of biochar.
- Biochar for fuel generation.
- Social-economic impacts of biochar for energy productions and environmental restoration.

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Wei-yin Chen
cmchengs@olemiss.edu
Mississippi State University

Ruey Ann Doong
radoong@nctu.edu.tw
National Chao Tung University

Mao Hoon Fan
mfan@uwyo.edu
University of Wyoming

C. P. Huang
huang@udel.edu
University of Delaware

Jerzy Leszczynski
jerzy@icnanotox.org
Jackson State University

Jillian Goldfarb
jilliang@bu.edu
Boston University

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**Advances in Environmental Analytical Methods for EPA
Compliance Reporting and Exposure Risk Assessment**

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The development of analytical methods for EPA Compliance Reporting and improving exposure risk assessment is a vibrant, continuously changing landscape. There is much work being done with both emerging and established technologies to design new methods that streamline laboratory operations, lower costs, decrease detection limits, improve accuracy and precision, or reduce hazardous chemicals and waste. At this symposium, experts and method developers will present their work on new methods soon to be, or recently proposed for EPA compliance reporting, for detection and assessment of emerging contaminants and persistent pollutants, and for data needs for improved risk assessment. Topics of interest include, but are not limited to:

- Improvements in extraction and detection levels for mixed media samples
- Differentiating sources and transformation products of stable isotopes
- Methodological challenges of multi-residue analysis in environmental samples
- Analysis and detection of emerging disinfection byproducts
- Enhance speciation and detection of organometallics
- Understanding spatial configuration and distribution of microbial products
- New materials and techniques for fingerprinting oil and chemical spills
- Green analytical methods for detecting and monitoring compounds
- Rapid sample preparation techniques, on-line extraction, and sample minimization

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William Lipps
wclipps@shimadzu.com
Shimadzu Scientific Instruments

Brahm Prakash
brprakash@shimadzu.com
Shimadzu Scientific Instruments

This symposium is sponsored by Shimadzu Scientific.

Note: Papers focused on method development for the environmental fate and transport of nanomaterials should be submitted to the “**Measurements and Methods in Environmental Nanotechnology**” symposium, and the fate and transport of radionuclides to the “**Fate, Transport and Remediation of Radionuclides in the Environment**” symposium.

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On June 22, 2016, the Frank R. Lautenberg Chemical Safety for the 21st Century Act was signed into law thereby amending the Toxic Substances Control Act (TSCA), the Nation's primary chemicals management law. Implementation of the amended legislation will result in changes to the conduct of assessments by the Environmental Protection Agency Office of Pollution Prevention and Toxics to evaluate the fate, exposure and effects of new and existing chemical substances. Implementation of amended TSCA is an on-going process with potential evolution in assessment approaches in the areas of fate, exposure, hazard, and risk assessment.

The objective of this Special Symposium is to inform the scientific community of how assessments are conducted and to highlight changes in risk assessment approaches with the implementation of amended TSCA.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Laurence Libelo

Libelo.Laurence@epa.gov

202-564-8553

US EPA

Marcella Card

Card.Marcy@epa.gov

202-564-1202

US EPA

Edmund Wong

Wong.Edmund@epa.gov

202-564-3394

US EPA

Tala Henry

Henry.Tala@epa.gov

202-564-2959

US EPA

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers

**Ecological and Human Health Impacts of Emerging
Environmental Contaminants**

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017

Abstract Submission Deadline: **March 17, 2017**

This symposium aims to provide a multidisciplinary platform to communicate recent experimental or theoretical research related to ecological and human health impacts of emerging contaminants in the environment. Environmental contaminants targeted in this symposium can be of natural or synthetic origins, such as: pesticides, oil and dispersants, pharmaceuticals and personal care products (PPCPs), food preservatives and additives, metals and metalloids, flame retardants, and biotoxins, etc. We invite presentations addressing all issues of emerging environmental contaminants, including transport and fate through environmental compartments: such as air, water, soil/sediments; impacts on ecosystem, organisms, and human health from exposure to these chemicals. We are particularly interested in research presentations that link chemical structural and physiochemical properties to analytical method development, environmental fate, and toxicity mechanisms and mode of action findings. ***Presentations that link domains of analytical chemistry, biochemistry, pharmacology/ toxicology, ecology, agricultural, and engineering are encouraged.***

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Xiaoping Pan
panx@ecu.edu
East Carolina University

Baohong Zhang
zhangb@ecu.edu
East Carolina University

Selim Mustafa
selimm@ecu.edu
East Carolina University

Note: Papers focused on method development for the environmental fate and transport of nanomaterials should be submitted to the “**Measurements and Methods in Environmental Nanotechnology**” symposium, and the fate and transport of radionuclides to the “**Fate, Transport and Remediation of Radionuclides in the Environment**” symposium.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers**Food Safety and Analysis: Chemical Contamination Assessment**

**Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017**

Abstract Submission Deadline: **March 17, 2017**

Food is essential for life, however trace-level chemical contaminants have been identified in our food supply. Globally, chemical contamination in food processing has caused serious problems in human health. Chemical analysis of relevant contaminants plays an important role in food safety testing - ensuring food is safe and is in compliance with government regulatory limits. Current analytical techniques can identify numerous chemical contaminants in food at trace-levels or ultra-trace levels. However, food analysis remains a challenge in chemistry due to the complexity of food matrices and the limits of detection of the modern analytical instrumentation. Chemical contaminants in food that are of interest include, but not limit to environmental contaminants, such as heavy metals, polychlorinated biphenyls (PCBs), dioxins, persistent organic pollutants (POPs); natural toxins, like mycotoxins and marine biotoxins; pesticide residues, veterinary drug residues (antibiotics, sedatives, corticosteroids, and anabolic hormones); and unapproved food additives and adulterants.

This symposium will focus on current and future trends in risk assessment in food safety and emerging technologies in analytical and separation methodologies in food contaminants analysis. The challenges and gaps in food safety and analysis will be identified in the symposium.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Min Li (Primary Contact)
California University of Pennsylvania
Li@calu.edu

Rufus Chaney
USDA (Retired)
rufuschaney@verizon.net

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers**Molecular Foundry for Safer Chemicals: At the Crossroads of
Chemistry and Toxicology**

**Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017**

Abstract Submission Deadline: **March 17, 2017**

While chemists have developed extensive skills for designing chemicals with specific industrial or pharmaceutical functions, relatively little consideration is given to minimizing undesired biological activity at the design stage. There is a dire need to develop methodology that can be applied to designing commercial chemicals that lack biological activity in a manner analogous to the design of active pharmaceuticals with precise therapeutic action. Over the past decade toxicologists and eco-toxicologists have made significant strides in expanding the mechanistic insights that explain how chemicals exert toxicity in humans and other animals. Simultaneously, computational chemists have demonstrated ability to model increasingly complex biological systems *in silico*. This session showcases efforts to synergistically apply these two disciplines in order to predict toxicity and/or design chemicals with minimal probability for human and ecotoxicity. Research efforts presented will be those that push the frontiers of molecular-level biochemical understanding, chemical fate in the body, computational methods for simulating biological reactions, robust and widely applicable *in silico* predictive tools, characterization of experimental data uncertainty, predictive ability and design (or re-design) of chemicals with minimal toxicity. Special focus will be given to research efforts that demonstrate the benefit of interdisciplinarity between chemistry and toxicology in furthering the goal of molecular chemical design for safety.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Bryan Brooks
Bryan_Brooks@baylor.edu
Baylor University

Adelina Voutchkova
avoutchkova@gwu.edu
George Washington University

Note: Papers on toxicity due to exposure should be submitted to the “Ecological and Human Health Impacts of Emerging Environmental Contaminants” symposium.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers

Monitoring Water Quality and Infrastructure to Prevent Future Flints

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017

Abstract Submission Deadline: **March 17, 2017**

High levels of lead were found in Flint, Michigan's water supply in 2015. In order to save money, Flint had started drawing its water from the local river in April 2014 instead of buying Lake Huron water from Detroit. Residents started complaining about burning skin, hand tremors, hair loss, even seizures, and children were diagnosed with anemia. But Flint is hardly the only area with toxic lead levels. In August 2015, routine laboratory tests found unsafe levels of lead in drinking water in Sebring, OH, after workers had stopped adding a particular chemical to prevent corrosion of lead water pipes. Unsafe levels of lead have been found in tap water in Washington, DC, in 2001, Columbia, SC, 2005, Durham and Greenville, NC, in 2006, and Jackson, MS, in 2015.

However, lead is not the only water contaminant of concern; a number of man-made inorganic and organic compounds from arsenic to zinc can pollute water such as chemicals from industry and sewage, fertilizers, insecticides, pesticides, herbicides, detergents, gasoline combustion products, and pharmaceuticals, including endocrine disruptors. Natural processes can cause water contamination from arsenic that is harmful at levels above 10 parts per billion. Thus, we must monitor contamination from point and nonpoint source pollution at ultratrace levels, especially when changes are made in a water supply or infrastructure. This symposium will discuss various methodologies to monitor ultratrace contaminants in public water supplies, investigate impact of infrastructure on water quality, and recommend corrective steps to prevent future Flints.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Satinder Ahuja
sutahuja@atmc.net
Ahuja Consulting

Bommanna Loganathan
bommanna.loganathan@gmail.com
Murray State

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers**Trace Organic Contaminants (TrOCs) in Aquatic Systems:
Advancements in Monitoring and Remediation**

**Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017**

Abstract Submission Deadline: **March 17, 2017**

Trace organic contaminants (TrOCs; e.g. pharmaceuticals and personal care products – PPCPs, natural hormones, and industrial chemicals) are present in complex mixtures in domestic and industrial wastewater. They often pass through wastewater treatment plants (WWTPs) and are discharged into surface waters, where they can make their way into groundwater and into the potable water supply. TrOCs are detected ubiquitously in the aquatic environment around the world, as well as in finished drinking water. These contaminants pose a threat to aquatic ecosystems and potentially to human health. To adequately address the issue of TrOCs in the environment, we must: (1) better understand the risks posed by low-level, long-term exposure; (2) develop/implement low-cost, rapid, and easily-deployable detection methods, which can capture mixture effects (e.g. bioassays); (3) leverage existing infrastructure and new treatment technologies to mitigate the discharge of TrOCs from WWTPs and prevent human exposure; and, (4) better understand the transformation products of chemical and biological treatment methods and their toxicity relative to parent compounds.

The purpose of this session is to showcase the latest developments in chemical and biochemical methods for monitoring and mitigation/remediation of TrOCs in natural and man-made aquatic systems. Topics that may be covered in this session include, but are not limited to, the following:

- Monitoring TrOCs in natural systems
- Fate of TrOCs in natural systems
- Cutting-edge detection methods
- TrOC detection in complex matrices
- Treatment of TrOCs in wastewater
- Treatment of TrOCs in drinking water
- TrOCs and closed-loop water re-use
- Methods for rapid toxicity assessment
- Cost-effective monitoring of TrOCs
- TrOCs in WWTP biosolids
- Chemical/biochemical degradation pathways
- Combined chemical/biochemical treatment approaches

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Rachel Brennan
rbrennan@enr.psu.edu
Penn State University

Michael Shreve
mjs697@psu.edu
Penn State University

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers**Fate, Transport and Remediation of Radionuclides in
the Environment**

**Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017**

Abstract Submission Deadline: **March 17, 2017**

The purpose of this session is to highlight recent developments in radionuclide fate and transport in the environment and emerging remediation strategies. In particular, research targeting contaminants of concern identified by the U.S. DOE, e.g. technetium-99, iodine-129, and actinides, within the scope of mineral/water interfaces, redox chemistry, contaminant incorporation and immobilization in host minerals, speciation characterization, and solid phase characterization will be discussed. How comingled contaminants and local biogeochemistry impact physico-chemical processes dictating radionuclide fate, transport, and remediation will also be explored. Finally, we encourage researchers whose work links molecular-scale research to macro- and field-scale applications relevant to global nuclear waste sites and diverse environmental systems (e.g. groundwater, vadose zone, repositories etc.) to submit abstracts to this session.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Vasileios Anagnostopoulos
vanagnos@fiu.edu
Florida International
University

Sarah Saslow
sarah.saslow@pnnl.gov
Pacific Northwest National
Laboratory

Patricia Paviet
Patricia.Paviet@Nuclear.Energy.Gov
US Department of Energy, Office of
Nuclear Energy, Office of Materials
and Chemical Technologies

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers

Iron and Manganese Oxides: Their Formation, Structure, Reactivity, and Applications

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017
Abstract Submission Deadline: **March 17, 2017**

Iron and manganese oxide nanoparticles, ubiquitous in the natural environments, play essential roles in fate and transport of various contaminants and nutrients in many natural and engineered environmental systems through co-precipitation, adsorption, and redox processes. These complex processes have been one of the research foci in the fields of geochemistry, environmental chemistry, and environmental engineering for many decades. This symposium seeks contributions that advance the current understanding of the biogeochemical behavior of Fe and Mn (oxyhydr)oxides in natural environments as well as their environmental engineering applications. We welcome experimental and modeling contributions across multiple spatial and temporal scales.

Topics of interest include, but are not limited to:

- Nucleation and synthesis of Fe and Mn oxides, and their colloidal stability and phase transformations in the presence/absence of other aqueous species
- Adsorption and redox reactivity of Fe and Mn oxides occurring at oxide-water interfaces
- Applications of Fe and Mn oxides in natural and engineered environmental systems.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Yandi Hu
yhu11@uh.edu
University of Houston

Huichun Zhang
hjzhang@temple.edu
Temple University

Mengqiang Zhu
mzhu6@uwyo.edu
University of Wyoming

John Fortner
jfortner@wustl.edu
Washington University in St. Louis

David Waite
d.waite@unsw.edu.au
University of New South Wales

Confirmed invited speakers:

- Benjamin Gilbert (Lawrence Berkeley National Laboratory)
- David Waite (The University of New South Wales)
- Daniel Strongin (Temple University)
- Marc Michel (Virginia Tech)
- Randall Lee (University of Houston)
- Richard Colloins (The University of New South Wales)
- Xionghan Feng (Huazhong Agricultural University)
- Evert Elzinga (Rutgers University)
- Per Persson (Lund University)
- Lynn Katz (University of Texas at Austin)

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers**Metal Oxidation-Mediated Formation and Consequences of Reactive Oxygen Species in Natural or Engineered Aquatic Systems**

**Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017**

Abstract Submission Deadline: **March 17, 2017**

Recent advances in analytical techniques have allowed geochemists and environmental chemists to study the role of short-lived species, including reactive oxygen species (ROS), in a variety of biogeochemical and engineered processes of environmental relevance. This symposium will present the most recent findings on the production mechanism of ROS, their kinetics of transformation, and their effects in natural and engineered aquatic systems, including water column, soils, and sediments. It calls for abstracts that synthesize experimental or theoretical investigations of the fate of superoxide, hydrogen peroxide, and hydroxyl radical resulting from the oxidation of transition metals by dioxygen and peroxides. In addition, this symposium seeks abstracts from studies investigating how biogeochemical and technological sources of reduced transition metals, including from minerals and zero-valent metals used in chemical remediation or bioremediation, are involved in the transformation of ROS. Topics of interest include but are not limited to the role of ROS in the formation of secondary radicals by oxidation of common ions such as halides and carbonate, the role of ROS in the formation of organic oxidation products and their possible involvement as free radical chain carriers, and the role of ROS as mediators of the abiotic transformation of metals and organic materials in aquatic systems. The symposium is intended to be of value to both the biogeochemical and environmental remediation communities.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

John Ferry
ferry@sc.edu
University of South Carolina

Martial Taillefert
mtaillef@eas.gatech.edu
Georgia Tech

Meagan Smith
meaganls@email.sc.edu
University of South Carolina

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers

Multi-Phase Environmental Chemistry of Aerosols

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017

Abstract Submission Deadline: **March 17, 2017**

Degraded environmental quality and climate change resulting from rapid developments in the global economy have become major challenges, worldwide. Of particular concern are increased primary emissions and secondary formation of atmospheric aerosols, which have profound effects on the Earth's radiation balance, biogeochemical cycles and human health. These effects are predicted to be even more severe in the near and distant future. Understanding and mitigating environmental impacts of aerosols relies on the fundamental knowledge of their environmental chemistry and evolution of their physical properties during their life cycle. Comprehensive studies of a diverse mixture of natural and anthropogenic aerosols require multi-dimensional measurements and complementary applications of novel experimental and modeling approaches. This symposium will cover recent advances in the cross-disciplinary areas of environmental chemistry of aerosols focused on the multi-phase reactions of gases, aerosols and environmental interfaces and their roles in climate forcing and health issues. The symposium will gather field and laboratory researchers, instrumentation developers, aerosol scientists, theoretical chemists, and atmospheric modelers with the goal of discussing emerging research in chemistry of aerosols. In view of the breadth of the subject we propose several platform sessions and a poster session devoted to this topic.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Alexander Laskin
alexander.laskin@pnnl.gov
Pacific Northwest National
Laboratory

Sergey Nizkorodov
nizkorod@uci.edu
University of California,
Irvine

Sherri W. Hunt
Hunt.Sherri@epa.gov
Environmental Protection
Agency

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers

Measurements and Methods in Environmental Nanotechnology

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017

Abstract Submission Deadline: **March 17, 2017**

The exciting properties of nanotechnology have already resulted in their incorporation into consumer goods with increasing applications expected in future years. This will inevitably result in their release into the environment. One of the principal challenges in understanding the risks associated with the release of nanoparticles is that new measurement methods are often needed both for the detection of these materials and for the assessment of their corresponding risks. The goal of this symposium is to keep the researchers in our field updated on the current research progress related to method development in environmental nanotechnology. This symposium will focus on, but is not limited to:

- Applications of analytical methods and experimental approaches that enable analyses of the environmental fate, surface characteristics, quantification, aggregation, and transformations of nanoparticles in environmentally relevant biotic or abiotic media
- Method development for assessing the ecological risks of these materials through the application of new or uncommon toxicology techniques to nanoecotoxicology, identification of important potential artifacts or measurement considerations in nanoecotoxicology, or investigations of the extent to which previous standard methods can be applied to studies with nanoparticles.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Elijah Petersen
elijah.petersen@nist.gov

Bryant Nelson
bryant.nelson@nist.gov

Shannon Hanna
shannon.hanna@nist.gov

Monique Johnson
monique.johnson@nist.gov

Antonio Montoro Bustos
antonio.montorobustos@nist.gov

Christopher Sims
christopher.sims@nist.gov

Note: Papers dealing with the environmental applications of nanomaterials should be submitted to the “**Nano-Enabled Water Treatment Technologies: Applications and Implications**” symposium and of consumer-embedded nanoproducts to the “**Environmental, Social, and Economic Impacts of Aged/Transformed Nanomaterial-enabled Consumer Products**” symposium.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers

Nano-Enabled Water Treatment Technologies: Applications and Implications

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017
Abstract Submission Deadline: **March 17, 2017**

Nanomaterials are materials that have at least one dimension below 100 nm. As opposed to their bulk counterparts, nanomaterials offer myriad unique and remarkable properties such as: magnetism, high surface area, selective surface reactivity, surface catalysis, rapid ion delivery, photocatalysis, plasmonic resonance, dielectric properties, electrical conductivity, mechanical strength, and super hydrophobicity. In light of these properties, nanomaterials have gained traction in the area of water treatment. For example, the magnetic and absorptive properties of iron nanoparticles are exploited to remove arsenic from drinking water while maintaining a much smaller physical footprint than traditional bulk materials used for arsenic removal. Other nanomaterials used in water treatment are: (1) photocatalytic titanium dioxide nanoparticles for the production of powerful oxidants (e.g. OH radicals) that degrade contaminants, (2) high surface area platinum series metal nanoparticles used to degrade chlorinated organics, and (3) carbon nanotubes with low friction and narrow pore size diameters to remove salt ions from water. Application of nanomaterials for water treatment requires assessment of material safety and sustainability due to their potential toxicity upon release. These can be evaluated through safe-by-design principles, structure-property-function and structure-property-hazard relationships, and life cycle assessments. Analytical techniques such as single-particle ICP-MS, TGA, LC/MS, SEM, and TEM can be applied for detection and quantification of metal or carbon-based nanomaterials in water and complex matrices to ensure efficacy of nanotechnology enabled treatment systems. Example topics that might be covered:

- Nanomaterials for contaminant adsorption
- Magnetic nanomaterials
- Photocatalytic and solar enabled nanomaterials
- Incorporation of nanomaterials into membranes
- Use of nanomaterials to reduce/prevent membrane biofouling and scaling
- Safety and sustainability of nanomaterials
- Environmental implications of using nanomaterials in water treatment

This symposium is intended to highlight graduate and post-doctoral researchers and is being primarily organized by graduate students. Your support and encouragement are most appreciated!

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. Inquiries should be directed to the symposium organizers:

Anjali Mulchandani
anjalin@asu.edu

Arizona State University

Michael S. Wong
mswong@rice.edu

Rice University

Camilah Powell
cdp5@rice.edu

Rice University

Kiril D. Hristovski
kiril.hristovski@asu.edu

Arizona State University

Natalia Hoogesteijn von Reitzenstein
natreitzen@asu.edu

Arizona State University

Note: Papers dealing with the environmental fate and transport of nanomaterials should be submitted to the “**Measurements and Methods in Environmental Nanotechnology**” symposium.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers**Advances and Challenges at the Food-Energy-Water Nexus**

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017

Abstract Submission Deadline: **March 17, 2017**

Providing an adequate supply of fresh water, food and energy is one of the grand challenges of the current century due to climate change, population increase and industrial growth. Moreover, food, energy and water (FEW) sectors are interrelated. Sustainable management of the integrated FEW system relies on balancing a complex set of technological and institutional approaches. Sustainable and energy efficient technologies are needed to combat current and future global challenges in the context of food-energy-water nexus. This symposium welcomes research papers that describe recent advances in the context of food-energy-water nexus. Topics that will be covered in this session include, but are not limited to:

- Increasing water usage efficiency in energy and agricultural sectors
- Energy efficient water treatment and distribution
- Water reuse in energy generation processes and irrigation
- Management of agriculture runoffs
- Production of energy and value-added products from waste and wastewater
- Sensors including water and food quality monitoring
- Membranes in the context of FEW nexus
- Reduction and beneficial usage of food waste
- Integrated modeling for management of water
- Recovery of thermal energy from water and wastewater
- Food-energy-water challenges in the developing world

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Indranil Chowdhury
indranil.chowdhury@wsu.edu
Washington State University
Soryong Chae
chaesg@ucmail.uc.edu
University of Cincinnati

Dionysios (Dion) Dionysiou
dionysios.d.dionysiou@uc.edu
University of Cincinnati
Satinder Ahuja
sutahuja@atmc.net
Ahuja Consulting

Yuehe Lin
yuehe.lin@wsu.edu
Washington State University

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers**Advances and Challenges in Separation and Mixing of Salts for the Sustainable Production of Food, Energy and Water**

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017

Abstract Submission Deadline: **March 17, 2017**

Clean water and energy sources are essential for sustainable food production. Growing populations and periodic drought conditions have exacerbated water and energy stress in many areas worldwide. Desalination of seawater and brackish groundwater is being considered or is becoming a more and more attractive solution to fresh water scarcity in many countries. Unfortunately, desalination requires a sizeable energy investment and causes significant carbon emissions with conventional approaches. However, renewable energy technologies can be paired with desalination to mitigate concern over the environmental impacts of increased energy use. On the other hand, a significant potential to obtain clean energy exists from mixing water streams with different salt concentrations. This symposium welcomes research papers that describe recent global advances and challenges in the separation and mixing of salt streams for the sustainable production of water, energy, and food. The topics covered in this session include, but are not limited to:

- Advanced and/or hybrid processes for water and/or energy production: lab, pilot, and field scale case studies
- System scale modeling, efficiency analysis, and optimization of processes involving separation and mixing of salts
- Emerging materials and devices
- Integration of desalination with renewable energy
- Social and economic impacts of desalination or energy production from salts

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Soryong Chae
chaesg@ucmail.uc.edu
University of Cincinnati

Shihong Lin
shihong.lin@vanderbilt.edu
Vanderbilt University

Ngai Yin Yip
n.y.yip@columbia.edu
Columbia University

David Jassby
djassby@engr.ucr.edu
University of California,
Riverside

Chan-Soo Kim
damulkim@kier.re.kr
Korea Institute of Energy
Research

Jin-Soo Park
energy@smu.ac.kr
Sangmyung University

James Landon
james.landon@uky.edu
University of Kentucky

Marta Hatzell
marta.hatzell@me.gatech.edu
Georgia Institute of
Technology

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers**Advances in Chemical Oxidation for Water and Wastewater Treatment Systems**

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017

Abstract Submission Deadline: **March 17, 2017**

This symposium focuses on advances in chemistry and technologies regarding chemical oxidation for addressing traditional and emerging contaminants for potable water treatment, water reuse, and wastewater treatment. Chemical oxidation has long been applied as a major barrier to improve the quality of water and wastewater. In an oxidative process, unwanted organic compounds are converted into harmless or non-objectionable forms, or inorganic metal species are oxidized to insoluble forms that are subsequently removed by precipitation. However, accompanied with the contaminant degradation, more toxic chemical oxidation byproducts are likely produced. A variety of chemical oxidative processes have been developed and applied, including conventional oxidation processes involving the use of oxidizing agents such as chlorine, chlorine dioxide, permanganate, ozone, and ferrate, and advanced oxidation processes (AOPs) in which free radicals are produced. The topics that would be covered in this session are, but are not limited to:

- Innovative chemical oxidative processes that have a potential for application in water and wastewater treatment systems
- New methods to produce a strong oxidant (e.g. hydroxyl radicals, halogen radicals, sulfate radicals, and ferrate)
- Formation of undesirable chemical oxidation byproducts
- Reaction mechanisms, kinetics, and pathways of chemical oxidation of water pollutants
- Interactions of oxidants with water/wastewater matrix constituents (e.g. natural organic matter (NOM), effluent organic matters (EfOMs), and inorganic ions)

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Yang Deng
dengy@mail.montclair.edu
Montclair State University

Weihua Song
wsong@fudan.edu.cn
Fudan University

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers

Electrochemical Technologies for Water Purification

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017

Abstract Submission Deadline: **March 17, 2017**

Electrochemical water purification technologies have several advantages, including operation at ambient conditions, minimal or zero chemical addition, adjustable / controllable treatment rate, and rapid start-up. However, they often employ expensive materials (membranes and electrodes), have higher energy demand, and are consequently less widely used than conventional, physical, chemical and biological water treatment processes. With the recent progress in materials processing and electrode fabrication, there has been a renewed interest in the use of electrochemical processes for the treatment of drinking water, municipal and industrial wastewaters, and for desalination. This symposium focuses on recent advances in electrochemical water purification technologies. The topics that will be covered in this symposium include, but are not limited to:

- Electrochemical advanced oxidation processes, including direct and indirect anodic oxidation, electro-Fenton
- Electrochemical reduction and oxidation of trace organic compounds
- Formation of disinfection byproducts in electrochemical treatment systems
- Removal of turbidity, hardness, silica, and arsenic by electrochemical coagulation
- Water desalination by capacitive deionization
- Synthesis, characterization, and application of novel electrode materials

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Anh Pham
a.pham@carleton.ca
Carleton University

Edward Roberts
etprober@ucalgary.ca
University of Calgary

Brian Chaplin
chaplin@uic.edu
University of Illinois,
Chicago

Justin Jasper
jjasper@caltech.edu
California Institute of
Technology

James Barazesh
jbarazesh3@berkeley.edu
University of California,
Berkeley

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Call for Papers

**Environmental Applications of Liquid Phase Catalysis for
Green Chemical Processes of Renewable Materials**

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017

Abstract Submission Deadline: **March 17, 2017**

Catalysts increase process efficiency by improving product yield and selectivity of and by reducing operating temperatures relative to non-catalytic reaction. For this reason, catalysts constitute a key component of the green chemical processes that are at the heart of chemistry's impact on the global economy. In recent years and especially due to the growing importance of renewable feedstocks for fuels, chemicals, and materials, attention has shifted from the traditional vapor phase processes to performing catalytic reactions in the liquid phase, especially in water-rich liquid phases. Performing catalytic reactions in liquid phases, especially those containing large quantities of water, has potential to improve process energy efficiency, intensity, and productivity. However, the vast majority of studies on catalytic reactions have been performed in the vapor phase and far less is known about catalysis in the liquid phase. Phenomena as simple as the stability and chemical state of the catalysts themselves have recently been shown to be much different in the liquid phase than in the vapor. A growing field of researchers has turned attention toward this challenge and this symposium will provide an opportunity to gauge the state of the field. Areas included in the symposium will include (but not be limited to): synthesis and characterization of new materials designed for liquid phase reactions; development of new processes operating completely or partially in a liquid phase, study of traditional catalysts under liquid phase conditions, and theoretical studies of catalyst chemistry and reaction mechanism.

The objective of this symposium will be to establish the frontiers of this research area, with input from scientists and engineers working on all aspects of liquid-phase catalysis, from synthesis of new materials with liquid-phase stability, design of new liquid phase reactors, analysis of activity and stability of familiar catalysts under liquid phase conditions, and theoretical and experimental investigation of reaction mechanisms. Particular focus will be on catalytic reactions occurring in liquid water phases, including near-critical and supercritical water. Abstracts are invited on all areas of liquid-phase catalysis with environmental applications, including experimental and theoretical studies of catalytic stability, activity, product selectivity, mechanism, and reactor design, including reactive separations.

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Michael Timko
mttimko@wpi.edu
Worcester Polytechnic Institute

Aaron Deskins
nadeskins@wpi.edu
Worcester Polytechnic Institute

Jesse Bond
jqbond@syr.edu
Syracuse University

Note: Papers focused on environmental remediation and energy applications should be submitted to the **"Heterogeneous Catalysis for Environmental Remediation and Energy Applications"** symposium.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers

Green Chemistry and the Environment

Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017

Abstract Submission Deadline: **March 17, 2017**

Chemical processes that utilize ‘green’ principles are essential towards developing as well as ensuring a sustainable environment and future. The field of green chemistry has impacted many areas and has led to advances in chemical, product and process design, (bio)catalytic technology (catalyst fabrications, homogeneous and heterogeneous catalysis and enzyme-based processes), waste valorization, biomass conversion, and alternative energy. This symposium will bring together scientists from the academic, industrial, and government sectors to discuss emerging green chemistry strategies in biotechnology, chemistry, chemical engineering, environmental engineering, and toxicology. Advances in green chemistry concepts will be enhanced by obtaining a better understanding of structure-hazard relationships, mechanistic pathways involved in various reactions, and new tools and approaches to implement and assess environment impact of pollution prevention practices. The symposium will further focus on theoretical and experimental research by bringing together experts in the field to address the necessity of green chemical processes to protect human health and the environment. Topics covered in this symposium will include:

- Designing Safer Chemicals
- Alternative and Renewable Energy
- Waste and Pollution Valorization
- Green Chemistry-Based Syntheses
- Green Solvents and Auxiliaries
- New Analytical and Computational Methods
- Biorenewables and Green Feedstocks
- Less Hazardous Industrial Practices
- Assessing Environmental Impact of Green Chemistry Practices

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Sherine Obare
Sherine.obare@wmich.edu
Western Michigan
University

Alina Balu
qo2balua@uco.es
University of
Cordoba

Stephen DeVito
Devito.steve@epa.gov
US EPA

Rafael Luque
q62alsor@uco.es
University of
Cordoba

Note: Papers on liquid phase catalysis should be submitted to the “**Environmental Applications of Liquid Phase Catalysis for Green Chemical Processes**” symposium.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers**Environmental Justice: Role and Impact of Diversity on
Environmental Stewardship**

**Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017**

Abstract Submission Deadline: **March 17, 2017**

This symposium aims to bring awareness and relevance to topics in environmental stewardships, and how the issue is affecting the population diversity living in the surroundings of the affected areas. The symposium will be inclusive of different cases affecting the different regions of the geosphere. Topics will include soil, air and water contamination; changes in the biodiversity of different regions, and toxicology, among others. The relationship between understanding the chemistry of these issues and environmental justice will be discussed as well.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Jerry Sarquis
sarquijl@miamioh.edu
707-395-0260
Miami University, emeritus

Armando Rivera
RIVERAA2@elac.edu
(323) 267-3785
East Los Angeles College

Michael Santiago
Michael.santiago@ars.usda.gov
504-286-4273
USDA

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org> by March 17, 2017

Call for Papers***Science and Perception of Climate Change***

**Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017**

Abstract Submission Deadline: **March 17, 2017**

An interdisciplinary symposium titled ‘The Science and Perception of Climate Change’ will be held at the 254th Meeting of the American Chemical Society in Washington, DC. The symposium will bring together scholars from various disciplines, such as chemistry, chemical education, environmental chemistry, sustainability, climatology, biology, business, geography, psychology, sociology, political science, and communication, along with policymakers, to discuss problems and share solutions related to climate change challenges. At the end of the presentations, a panel discussion titled ‘When Facts Don’t Matter’ will be held to consider topics of current and future research interests with an emphasis on how chemists can continue to play a significant role in overcoming challenges associated with climate change.

This symposium aims to assess current and future challenges associated with the science and perception of climate change. The topics will be selected to target an audience consisting of undergraduate and graduate students, industrial researchers, academic scholars, entrepreneurs, postdoctoral fellows, and policy makers. The presentations will aid in understanding some of the risks and responsibilities as well as the politics and policies that impede progress within the context of current practices and regulations. Furthermore, we aim to identify educational tools and solutions that are broadly applicable; i.e. for outreach and improved science literacy. The panel discussion will be held to foster a dialogue about how to address new directions in research and where chemists can play an important role, not just as scientific experts but beyond.

Please submit your abstracts using the ACS Meeting Abstracts Programming System (MAPS) at <https://maps.acs.org>. General information about the conference can be found at www.acs.org/meetings. Any other inquiries should be directed to the symposium organizers:

Elke Schoffers
Elke.Schoffers@wmich.edu
Western Michigan University

Sherine O. Obare
Sherine.Obare@wmich.edu
Western Michigan University

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Call for Papers

Undergraduate Environmental Chemistry and Sustainability

**Division of Environmental Chemistry
254th American Chemical Society Fall National Meeting & Exposition
Washington, DC – August 20-24, 2017**

Abstract Submission Deadline: **March 17, 2017**

This symposium focuses on different pedagogical approaches for engaging undergraduate students in various aspects of environmental science and sustainability. Possible areas involve undergraduate research, service learning, study abroad, and interdisciplinary curricula and co-curricula programs. New approaches for integration of environmental and sustainability into existing curricula will also be covered. Potential areas of interest include analytical chemistry, phytoremediation, biosorbents, climate change, geochemistry, water quality, and alternative energy.

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Michael Berger
bergerm@simmons.edu
Simmons College

Lindsey Welch
lawelch@cedarcrest.edu
Cedar Crest College

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