

Dear Colleagues,

The Geochemistry Division would like to call your attention to three important announcements:

- 1) Abstract submission for the upcoming Spring 2023 ACS Meeting (March 26 – 30, 2023 in Indianapolis, IN) is now open at <http://maps.acs.org>. The meeting theme is “Crossroads of Chemistry”. **The abstract submission deadline is October 17, 2022.** For additional details, see full Call for Abstract Submissions below (page 2 – 6).
- 2) We are pleased to invite applications for the Geochemistry Division’s **Student Travel Award** and **Early Career Scientist Travel Award** for the Spring 2023 ACS National Meeting. **Applications submission deadline is October 17, 2022. They should be sent to GEOC program chair Eric Pierce ([pierceem@ornl.gov](mailto:pierceem@ornl.gov)).** For additional details, see full Call for Travel Award Applications below (page 7 – 8).
- 3) It is now time to propose symposia for the Geochemistry program at the upcoming Fall 2023 ACS Meeting (August 13 – 17, 2023 in San Francisco, CA). The meeting theme is "Harnessing the Power of Data". **Proposals are due to Lynn Katz ([lynnkatz@mail.utexas.edu](mailto:lynnkatz@mail.utexas.edu)) by December 5, 2022.** For additional details, see full Call for Symposium Proposals below (page 9).



2023 Spring National Meeting  
March 26–30, 2023  
Indianapolis, IN  
*Crossroads of Chemistry*



## Call for Abstract Submissions Spring 2023 Meeting

The Spring 2023 ACS National Meeting will be held from March 26 to 30 in Indianapolis, IN. The meeting theme is “Crossroads of Chemistry”. Please consider submitting an abstract to the following GEOC symposia. Details of each symposium are followed.

1. Geochemistry Division Medal Symposium
2. Symposium in Honor of Professor Vicki Grassian – Geochemistry Division Medal winner
3. Fire-affected Cycling of Carbon and Nutrients from Molecular to Global Scales
4. Geochemistry of CO<sub>2</sub> Capture, Conversion, and Sequestration
5. Aquatic Redox Chemistry
6. Interfacial Reactivity of Nanoconfined Surfaces
7. Environmental Remediation through Microbial and Chemical Pathways
8. Undergraduate Research in Geochemistry

Please submit your abstract at <http://maps.acs.org>. Abstract submission deadline is **October 17, 2022**.

### GEOC Symposia

#### Geochemistry Division Metal Symposium



Join us in congratulating Prof. Vicki Grassian for her selection as the 2023 Geochemistry Division Medalist! Prof. Grassian was selected for her original and creative contributions in understanding the chemistry and global impacts of mineral dust aerosol and nanoscale oxides. In addition to her outstanding knowledge production, Prof. Grassian has stellar contributions to diversity, leadership and service to the geochemistry community, and mentorship of students, postdocs and junior scientists.

Prof. Grassian will be awarded the GEOC Medal in a ceremony at the Spring ACS National Meeting & Exposition in Indianapolis, IN. We will host a symposium in her honor featuring work that honors her many contributions in the areas of atmospheric chemistry, mineral/water interface chemistry, environmental chemistry, mineral dust aerosol and nanoscale oxides.

#### Symposium in honor of Vicki Grassian – Geochemistry Division Metal Winner

We will also host a special symposium in honor of Prof. Vicki Grassian.

## Fire-affected cycling of carbon and nutrients from molecular to global scales

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<b>Affiliation</b>	University at Albany, SUNY	Rensselaer Polytechnic Institute	Old Dominion University

**Symposium description:** Fire is a major force in the Earth system that influences global ecosystems patterns and processes. Fire can significantly affect the global carbon and nutrient cycles through not only immediate combustion of plant biomass and litter, but also legacy impacts on ecosystem structure and function. Understanding the spatial patterns and temporal changes of these elemental cycling processes is critical for predicting the trajectories of ecosystem recovery from fire and modeling of fire-ecosystem interactions. This session invites contributions that bring together multidisciplinary insights to better understand how fire affects the physical, chemical, and biological characteristics of ecosystems and their interplay in the post-fire cycling dynamics of carbon and nutrients. Topics include, but are not limited to: 1) characteristics and changes in soil or water chemistry, microbial community, and vegetation in fire-impacted ecosystems, 2) laboratory and field studies investigating the transport, transformation, and fate of burning residues (i.e., charcoal and ash), 3) dynamics of below- and above-ground interactions and impacts on carbon and nutrient cycling, 4) novel analytical tools and modeling approaches that improve our understanding of the fire-affected biogeochemical cycling of carbon and nutrients.

## Geochemistry for CO<sub>2</sub> Capture, Conversion, and Sequestration

	<b>Organizer#1 (Primary contact)</b>	<b>Organizer#2</b>	<b>Organizer#3</b>	<b>Organizer#4</b>
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<b>Affiliation</b>	Argonne National Laboratory	Oak Ridge National Laboratory	Oak Ridge National Laboratory	Oak Ridge National Laboratory

**Session Description:** It is widely accepted that accumulation of anthropogenic carbon dioxide (CO<sub>2</sub>) in the atmosphere has caused global warming. The most feasible long-term strategy to avoid the most critical consequences is to capture and sequester CO<sub>2</sub> in geological systems. Systematic integration of knowledge across wide spatial and temporal scales of the physicochemical interactions between geologic media and carbon-containing fluids is needed for a successful application.

This symposium focuses on creating a platform for cross-disciplinary discussion to bridge the gap between a fundamental understanding of CO<sub>2</sub>-related geochemical processes and practical applications for the development of the materials and technologies for CO<sub>2</sub> sequestration.

We are seeking abstracts on topics including but not limited to:

- Capture, conversion, and sequestration of CO<sub>2</sub> using geo- and geo-inspired materials
- Geological CO<sub>2</sub> sequestration by mineral carbonation, solubility, and physical trapping
- Enhanced weathering and origins in silicate and carbonate weathering driven by CO<sub>2</sub>
- Effect of confinement on CO<sub>2</sub>-containing fluids
- Multiscale modeling of the kinetics and dynamics of carbon-related reactions
- Direct air capture via mineralization

Theoretical, experimental, and field investigations are welcome, as well as research of new material development and techniques for lab- or field-scale applications.

## Aquatic Redox Chemistry

	<b>Organizer#1 (Primary contact)</b>	<b>Organizer#2</b>	<b>Organizer#3</b>	<b>Organizer#4</b>
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<b>Affiliation</b>	Pennsylvania State University	Oregon Health Science University	Pacific Northwest National Laboratory	Washington University St. Louis

**Session Description:** Redox reactions play critical roles in determining the quality, chemistry, and biology of natural and engineered aquatic systems. In this broad and inclusive session, we invite contributions on recent developments that explore all aspects of aquatic redox chemistry.

## Interfacial Reactivity of Nanoconfined Surfaces (Co-sponsored by ENVR, COLL, CEI)

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<b>Affiliation</b>	Sandia National Laboratory	Georgia State University	Pacific Northwest National Laboratory

**Session Description:** Nanoconfinement by interfaces is common in natural systems (soils, sedimentary rocks, and the atmosphere) and in industrial applications (nanocatalysis, water filtration). Nanoconfined systems are characterized by high surface-to-water ratios, overlapping electrical double layers from opposing surfaces, and sometimes by interfacial terminations that include gasses or supercritical fluids. Nanoconfined water is highly ordered and rotationally restricted due to interactions with solid surfaces, leading to relatively low dielectric response. The structure of nanoconfined water impacts mass transport and hydration structures of dissolved and surface-bound species. Because of the distinct properties of nanoconfined water, energetics and reaction pathways at nanoconfined surfaces are non-trivial and distinct from bulk (non-confined) solid-water interfaces.

Nanoconfinement effects on interfacial chemistry are critical to separation science, energy generation, carbon storage, nuclear waste disposal, and climate modeling; however, detailed fundamental explanations for the unique reactivity of nanoconfined surfaces remain elusive.

We invite contributions on solid-water interfacial chemistry under nanoconfinement. A mechanistic and conceptual understanding of the key factors controlling reactivity in nanoconfined aqueous solutions requires an integrated approach, and both experimental and computational studies are encouraged. The topics to be covered in this session include, but are not limited to:

- properties of water under nanoconfinement
- interfacial reactivity at nanoconfined surfaces and in nanopores
- mass transport in nanopores and nano-scale water films
- nanoconfinement effects on electron transfer
- nanoconfinement phenomena that can be traced to the field-scale
- dissolution, nucleation, and crystal growth under nanoconfinement
- nanoconfinement effects on thermodynamics and kinetics
- novel experimental and computational methods for studying nanoconfined surfaces

## Undergraduate Research in Geochemistry

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<b>Affiliation</b>	Queens College, City University New York	Argonne National Laboratory

**Session Description:** This session will highlight research projects in geochemistry from undergraduate students, including those who have recently graduated. This session is intended to provide recognition to undergraduate students in geochemistry, encourage networking, identify opportunities for graduate research, and help develop the careers of future chemists. A workshop/networking event for the students will also be included. Students are also encouraged to attend the divisional mixer for additional networking opportunities.

## Environmental remediation through microbial and chemical pathways

	<b>Organizer #1</b>	<b>Organizer #2</b>	<b>Organizer #3</b>	<b>Organizer #4</b>	<b>Organizer #5</b>
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Affiliation	Hanyang University, Seoul, South Korea.	Hanyang University, Seoul, South Korea.	Helmholtz-Zentrum Dresden - Rossendorf (HZDR), Dresden, Germany	Hanyang University, Seoul, South Korea.	Seoul National University, Seoul, South Korea.

**Session Description:** The transport and transformation of environmental pollutants are highly influenced by natural processes that are either chemical or microbial. Understanding the complex interactions of these chemical and microbial processes assist in designing and optimizing the remediation tactics. This session is aimed to gather the experts who are addressing recent advances in microbial and chemical processes affecting the fate, transport, and remediation of organic and inorganic subsurface pollutants. We invite the experimental, modeling, and remedial contributions to understand microbial metabolism, chemical processes, and transport of pollutant in the natural systems and their state-of-the-art applications for on-site, although we do not put a limit only to natural environment. The research contributions describing the role of mixed microbial communities in biotransformation and their mechanism of pollutant detoxification are invited. We also encourage the submissions that address the emerging applications of nanotechnology for environmental pollution prevention, contaminant treatment, and hazardous waste site cleanup.

**The topics that would be covered in this session are, but are not limited to:**

- Understanding the microbial and chemical interactions with the inorganic and organic contaminants in environment, and their influential role in remediation.
- The *in-situ* and *ex-situ* remediation for decontamination of metals and organic contaminants from soil and water phases.
- Biogeochemical interactions of organic contaminants in natural environment.
- Interactions of geochemically important elements/contaminants (C, N, Fe, Mn, Hg, U, As and S)
- Application of these processes to develop remedial technologies for decontamination of inorganic and organic contaminants at the contaminated sites.
- Emerging molecular techniques for identification of microbial processes, interactions, and their networks in geogenic processes.
- Microbial communities, their role and mechanism of contaminant biotransformation in soil, water.
- Nano- and micro- based materials, such as adsorption, membranes, extraction, and photocatalysis

for environmental remediation.

- Transformation of wastes into commodity material for economic viability.



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*Crossroads of Chemistry*



## Call for Travel Award Applications Spring 2023 Meeting

We are pleased to invite applications for the Geochemistry Division's **Student Travel Award** and **Early Career Scientist Travel Award** for the Spring 2023 ACS National Meeting to be held March 26 – 30, 2023 in Indianapolis, IN. Applications are due **October 17, 2022** and should be sent to GEOC program chair Eric Pierce ([pierceem@ornl.gov](mailto:pierceem@ornl.gov)).

### Student Travel Award

- **Number of awards:** Up to 8 awards based on the quality of the applications.
- **Award:** (1) The Geochemistry Division will pay for the awardees' registration for the ACS National Meeting at the corresponding ACS member rate. (2) Awardees will be given an extended time allocation (typically 25-30 minutes) for their oral presentations.
- **Eligibility:** (1) The applicant must be an undergraduate or graduate student. (2) The applicant must have already submitted a regular abstract to MAPS for the meeting (see Application Procedure for details). (3) The applicant must be the presenting author. (4) Only one application per presenting author will be considered.

### Early Career Scientist Travel Award

- **Number of awards:** Up to 2 awards based on the quality of the applications.
- **Award:** (1) The Geochemistry Division will pay for the awardees' registration for the ACS National Meeting at the corresponding ACS member rate. (2) Awardees will be given an extended time allocation (typically 25-30 minutes) for the oral presentation.
- **Eligibility:** (1) The applicant must have received their PhD degree within 5 years of the abstract submission deadline (October 17, 2022). (2) The applicant must have already submitted a regular abstract to MAPS for the meeting (see Application Procedure for details). (3) The applicant must be the presenting author. (4) Only one application per presenting author will be considered.

### Application Procedures

- Submit your regular abstract to the ACS Meeting Abstract Programming System (MAPS <http://maps.acs.org>) before the due date (October 17, 2022).
- Submit a separate, extended abstract to the GEOC Program Chair at: [pierceem@ornl.gov](mailto:pierceem@ornl.gov)
- The extended abstract should not exceed one page (use at least 11-pt font, single-line spacing, and 1-inch margins) and may contain tables and figures (counted toward the page limit). Make sure to (1) include your name, affiliation, abstract title, and abstract number, and (2) indicate whether you are an undergraduate/graduate student (for the Student Travel Award) or your PhD degree date/year (for the Early Career Scientist Travel Award).
- Applications must be received during the abstract submission window (by October 17, 2022).

### Evaluation

- Abstracts will be judged based on the impact on the field of geochemistry, technical approach, quality and clarity of writing, relevance of the abstract to the symposia and national meeting

themes, and balance among different symposia.

- Award winners will be notified by the end of November 2022.

#### **Questions?**

- General information about the conference can be found at:  
<https://www.acs.org/content/acs/en/meetings/national-meeting.html>
- Questions about the awards should be directed to [pierceem@ornl.gov](mailto:pierceem@ornl.gov)





2023 Fall National Meeting  
August 13–17, 2023  
San Francisco, CA  
*Harnessing the Power of Data*



## Call for Symposia Proposals Fall 2023 Meeting

The Fall 2023 ACS National Meeting will be held August 13 – 17, 2023 in San Francisco, CA. The meeting theme is “**Harnessing the Power of Data**”. Please consider organizing a symposium in areas of broad interest to the geochemistry community, as well as topics aligned with the meeting theme.

If you are interested in organizing a symposium, please send an email to Program Chair Elect Lynn Katz ([lynnkatz@mail.utexas.edu](mailto:lynnkatz@mail.utexas.edu)) by December 5, 2022. Please include the following information:

- Title of the proposed symposium
- A brief description of the symposium
- Name, affiliation, and contact information of the organizer(s)
- Potential co-sponsoring divisions/programs

Relevant topics include, but are not limited to:

- Global geochemical cycles
- Planetary geochemistry
- Mineral-water interface structure and reactivity
- Mineral nucleation and growth
- Reactivity of biogenic minerals
- Microbially-driven geochemical reactions
- Geochemistry of subsurface CO<sub>2</sub>
- Reactivity of nano-particles and nano-pores
- Transport, uptake, and remediation of environmental contaminants