



# DIVISION NEWSLETTER



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## MESSAGE FROM THE CHAIR

Greeting, GEOC Division Members,

2019 was an exciting year for the Division of Geochemistry (GEOC) and its members!

From Orlando in the spring to San Diego in the fall, we did not only cover a lot of ground, but also a variety of topics in the 21+ symposia and sessions. From mineral crystallization, aggregation and dissolution, and microbial interactions in natural, geological processes and their application in remediation of contaminants to geochemistry of the urban and lived environment, and engaging students in chemistry and geochemistry with environmental issues and career pathways, GEOC showcased both depth and breadth. I want to thank you all you're your many contributions that made the GEOC programing successful.

In Orlando, the GEOC Division awarded the 2019 Geochemistry Medal to Dr. Everett Shock, Professor in the School of Earth and Space Exploration, and the School of Molecular Sciences, at Arizona State University. His insights into geochemical thermodynamics and his influence as a teacher and leader have transformed our understanding of chemistry in waters at high temperatures and pressures, challenged and changed our views on the origin of life, and pioneered new understanding of how microbes survive extreme environments, with implications for topics ranging from the origin of life to the exploration for life on icy worlds. Congratulations!

The GEOS proudly supports the next generation of Geochemists! In 2019, we continued this tradition and awarded eight student travel grants, five to Orlando and three to San Diego. Check out the names and affiliations of the winners in the awards section.



The traditional Tuesday-night GEOC Division social continued to be a huge success for members and their friends. In Orlando, 150+ guests gathered at the Blue martini lounge and feasted on upscale hors-d'oeuvres, enjoyed free drinks including specialty martini, and mingled for two full hours ;) These division-sponsored social events provide fun and effective ways to build community and strengthen our collaborative networks. I highly encourage you to attend and please feel free to bring collaborators, friends and significant others along. We look forward to further developing our Division and hope to see you all in the future at these events.

The Division is currently ramping up its activities in preparation for the 2020 meetings in Philadelphia (March 22 -26, 2020) and San Francisco (August 16 – 20, 2020)! Be on the lookout for the abstracts calls and I urge you all to submit abstracts and to encourage all your eligible students to apply to the student travel award.

The GEOC Division is ran by a small but highly dedicated groups of folks! I would like to personally thank them all for their exemplary service and sustained excitement throughout the year. If you are interested in joining the executive committee by running for a leadership position in the GEOC or just looking for volunteering opportunities, let one of us know. We are all featured on the GEOC website (<https://www.acs.org/geoc>). Follow GEOC on social media and do not be strangers. We look forward to seeing you all very soon.

It has been my pleasure to serve as the Division Chair in 2019. Thank you, sessions organizers and presenters, executive committee members and volunteers for another excellent year.

Nadine Kabengi, Ph.D.  
Division Chair





## ACS SPRING 2020 CALL FOR SESSIONS

**GEOC DIVISION  
ANNOUNCEMENT OF SYMPOSIA  
Spring 2020 ACS National Meeting  
March 22-26, Philadelphia, PA**

*“Macromolecular Chemistry: The Second Century”*

You are invited to submit abstracts for the following GEOC symposia:

- 40 Years of High-Resolution NMR Spectroscopy of Inorganic Solids
- Crystallization Pathways: New Perspectives on Nucleation, Growth & Dissolution of Natural & Synthetic Materials
- Engaging Students in Chemistry and Geochemistry with Environmental Issues & Career Pathways
- Environmental Challenges and Solutions in Oil & Gas Development
- Experimental and Computational Advances in the Study of Molecular Processes at Mineral-Water Interfaces
- Fundamental Reactions Driving Macroscopic Geochemical Processes
- Iron Oxides: Their Phase Transformations, Structures, Kinetics, & Applications
- Materials of the Universe: The Final Chemical Frontier
- Microbially-Driven Geochemical Reactions: Kinetics & Communities
- Reactive Transport Modeling: A Cutting-Edge Tool for Investigating Coupled Processes
- Reactivity & Transformation of Manganese Oxides in Natural and Engineering Systems
- Recent Approaches & Applications of Nanotechnology for the Restoration of Contaminated Soil & Groundwater
- General Geochemistry Oral and Poster



Detailed descriptions of symposia and contact information for organizers is attached.

Abstracts are due by **October 21<sup>st</sup>, 2019**.

<https://callforpapers.acs.org/philadelphia2020/GEOC>

For questions about specific symposia please contact the organizer directly.

For general questions contact: Ashaki Rouff ([ashaki.rouff@rutgers.edu](mailto:ashaki.rouff@rutgers.edu)).

**ACS FALL 2020 CALL FOR SESSIONS****CALL FOR SYMPOSIA  
Fall 2020 ACS National Meeting  
August 16-20, San Francisco, CA**

The Fall 2020 ACS National Meeting will be held from August 16-20 in San Francisco, CA. The meeting theme is “*Chemistry from Bench to Market*”. 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 Yuanzhi Tang ([yuanzhi.tang@eas.gatech.edu](mailto:yuanzhi.tang@eas.gatech.edu)) with the following information:

Title of the proposed symposium

A brief description of the symposium

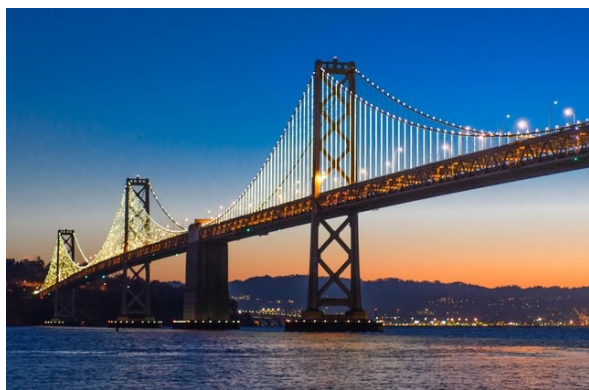
Name, affiliation, and contact information of the organizer(s)

Symposia proposals are due by **November 15<sup>th</sup>, 2019**.

Yuanzhi Tang

Geochemistry Division Program Chair

[yuanzhi.tang@eas.gatech.edu](mailto:yuanzhi.tang@eas.gatech.edu)



## STUDENT TRAVEL AWARDS

Congratulations to our Geochemistry Student Travel Award Winners

### **257th ACS Spring meeting in Orlando:**

Jennifer Bjorklund

Affiliation: University of Iowa

Yaguang Zhu

Affiliation: Washington University in St. Louis

Jing Zhang

Affiliation: Washington University in St. Louis

Yayu Li

Affiliation: University of Connecticut

Adeola Adeyemi

Affiliation: Ladoke Akintola University of Technology, Nigeria

### **258th ACS Fall meeting in San Diego:**

Zhenwei Gao

Affiliation: Washington University in St. Louis, MO, USA

Yunjai Jang

Affiliation: Seoul National University, Seoul, Korea (the Republic of)

Xuanhao Wu

Affiliation: Washington University in St. Louis, MO, USA

The Best Presentation Award went to Xuanhao Wu

## ELECTION INFORMATION

Dear ACS Geochemistry Division Members,

With November upon us, it is time to “Rock the Vote” for the ACS Geochemistry 2019 Election!

This year’s election includes candidates for three positions, Program-Chair Elect, Treasurer, and Alternate Councilor. A brief description of the position and its role is provided below as well as short bios of the candidates (listed in alphabetical order).

The polls will open on Nov 1<sup>st</sup> until Nov. 30<sup>th</sup> (Saturday) 2019 at midnight (Pacific Time).

**Program-Chair Elect** (4 year term): This officer will serve as Program-Chair Elect the first year and shadow the Program Chair. The following year, the candidate will serve as Program Chair and organize the symposium at the fall and spring national meetings. The third year, the candidate will serve as Division Chair, and finally as Past Division Chair in the fourth year:

Dr. Adam Wallace, Associate Professor, Department of Earth Sciences, University of Delaware

Dr. Wallace received a Ph.D. from Virginia Tech in 2008 and joined the faculty of the University of Delaware in 2013 following a postdoc at Lawrence Berkeley National Laboratory. His research utilizes both experimental and theoretical probes to investigate the molecular scale processes that underlie the nucleation, growth and reactivity of minerals in natural and engineered settings. Dr. Wallace has reviewed for more than 20 academic journals (including several published by ACS), for multiple sponsored programs within the National Science Foundation, the U.S. Department of Energy Office of Basic Energy Sciences, and the ACS Petroleum Research Fund. He has organized more than a half-dozen conference symposia at domestic and international conferences sponsored by the American Geophysical Union, the Geological Society of America, the Geochemical Society, and the ACS. In 2018, Dr. Wallace was honored to be the inaugural recipient of the College of Earth, Ocean and Environment’s Distinguished Teaching Award at the University of Delaware.



Dr. Yu (Frank) Yang, Associate Professor of Environmental Chemistry, Department of Civil and Environmental Engineering, University of Nevada, Reno

Dr. Yang received his Ph.D. from Peking University (China) in 2010, and did postdoc research at Yale University and University of Notre Dame during 2010-2013, before he joined University of Nevada, Reno. Dr. Yang’s research interests have been focused on the redox reactions of iron-organic matter complexes, with implications on climate change, carbon cycles, and water reuse. His research has been supported by National Science Foundation, Department of Energy, Department of Agriculture, industry partners and international agencies. His research has been recognized by several international/national awards, and he has been serving in editorial teams for seven journals and one book. He has organized several well-attended symposia for the Division during past few years, one of which has led to a special volume in Chemical Geology. He is eager to serve the community of Geochemistry Division, promote its interactions with other agencies (SSSA/AGU/GSA), and enhance career development-related activities.



Please contact Secretary Sang Soo Lee (sslee@anl.gov) for more details.

**ELECTION INFORMATION**

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**Treasurer** (3 year term): This officer will have charge of the funds of the Geochemistry Division, to collect dues and assessments, and to make all disbursements, subject to the approval of the Executive Committee. The Treasurer shall prepare a financial statement for presentation to the Division at its annual meeting. The duties of the Treasurer shall also include filing the necessary reports with the Internal Revenue Service.

Dr. Martial Taillefert, Professor, Earth and Atmospheric Sciences, Georgia Institute of Technology

Dr. Taillefert is a geochemist interested in environmental chemistry and chemical oceanography problems in sediments and subsurface environments. His research centers around redox processes and metal transformations at redox interfaces and combines field work in both marine and freshwater environments, laboratory manipulation of natural samples, and fundamental studies in well-defined conditions. Dr. Taillefert has been an ACS member for 25 years and has been involved in the Geochemistry Division between 2011 and 2014, including as Division Chair in 2013. He has also served on the Geochemistry Medal committee in 2014. Dr. Taillefert has a good understanding of the objectives of the ACS and the Division and plans to help increase the role of the Division in the Society, enhance participation of undergraduate and graduate students at national and regional meetings, and continue the healthy growth of the Divisions' finances.



**Alternate Councilor** (3 year term): This Councilor officer will attend and represent the Geochemistry Division at the Council meetings of the ACS in the absence of the Councilor(s) and to serve as members of the Executive Committee.

Dr. Sebastien Kerisit, Geochemist, Computational Scientist, Pacific Northwest National Laboratory

Dr. Kerisit received his PhD in computational chemistry from the University of Bath and is now a Senior Research Scientist at the Pacific Northwest National Laboratory. His research interests cover a wide range of topics relevant to the geochemistry community including the chemistry of mineral-water interfaces, carbon capture and sequestration, the aqueous corrosion of glasses, the mechanisms of mineral nucleation and growth, and the redox properties of natural systems. Sebastien has been a member of the ACS and the Geochemistry Division since 2006. He served a four-year rotation as Program Chair-Elect (2013), Program Chair (2014), Division Chair (2015), and Past Division Chair (2016) of the Geochemistry Division as well as a three-year term as Treasurer (2017-2019). Sebastien also served as Chair of the Geochemistry Division Medal Committee (2016-2019) and has organized and chaired numerous symposia at ACS National Meetings. I am always enthusiastic at the prospect of helping the geochemistry community, I have thoroughly enjoyed serving all of you as an officer of the Division over the last several years and I would be greatly honored to be given the chance to continue to serve the Division as Alternate Councilor.



Please contact Secretary Sang Soo Lee ([sslee@anl.gov](mailto:sslee@anl.gov)) for more details.

Thank you in advance for your participation!



**ADVERTISEMENT & NEWS****GEOC STRATEGIC PLANNING**

The Division will soon embark on a Strategic Planning exercise to set areas of priority for the next 5 years. Through this process, the Division aims to reinforce the vision, mission and core values, address current and future needs of the discipline and membership, and align priorities with the ACS Strategic Plan.

All GEOC members are invited to participate in the Strategic Planning process. More details on how members and prospective members can contribute will follow. In the meantime, send questions or comments to: [ashaki.rouff@rutgers.edu](mailto:ashaki.rouff@rutgers.edu)

## DIVISION OFFICERS & COMMITTEES

### Division Chair

Nadine Kabengi is an associate professor of Geochemistry at Georgia State University where she holds joint appointments at the Geosciences and Chemistry departments. Her research involves measuring the energetics and thermodynamic properties of surface reactions, focusing on mineral-water interfaces and surface reactivity. In her free time, she enjoys binge-watching TV and internet series.



### Past Division Chair

William (Bill) Burgos is a professor of environmental engineering in the Department of Civil and Environmental Engineering at the Pennsylvania State University. His research focuses on the biogeochemistry of metals and radionuclides, the bioremediation of organic contaminants, and water management associated with shale gas development.



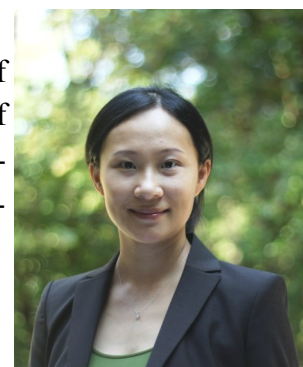
### Program Chair

Dr. Ashaki Rouff is an Associate Professor of Geochemistry at Rutgers University, Newark NJ. Her research uses laboratory-based model systems, field work, and advanced molecular-scale techniques; as applied to the areas of contaminant geochemistry, urban geochemistry and sustainable geochemistry. Dr. Rouff has been a member of the Geochemistry Division and an American Chemical Society member since 2002.



### Program Chair Elect

Yuanzhi Tang is an associate professor of geochemistry at Georgia Institute of Technology. Her research focuses on revealing the kinetics and mechanisms of biogeochemical reactions occurring at mineral-water interfaces, as well as the applications of advanced synchrotron techniques. She currently serves as the Program Chair Elect for the Geochemistry Division.



## DIVISION OFFICERS & COMMITTEES

### Treasurer and Awards Committee Chair

Sebastien Kerisit received his PhD in computational chemistry from the University of Bath and is now a Senior Research Scientist at the Pacific Northwest National Lab. His research interests cover a wide range of topics relevant to the geochemistry community including the chemistry of mineral-water interfaces, carbon capture and sequestration, the aqueous corrosion of glasses, the mechanisms of mineral nucleation and growth, and the redox properties of natural systems. He has been a member of Geochemistry Division since 2006, and served a four-year rotation as Program Chair-Elect (2013), Program Chair (2014), Division Chair (2015), and Past Division Chair (2016) of Division. Most recently, Sebastien served as Chair of the Geochemistry Division Medal Committee.



### Secretary

Sang Soo Lee is a staff scientist at Argonne National Laboratory. His research focuses on in situ and real-time observations of molecular-scale processes at mineral-water interfaces in geochemical systems primarily using synchrotron-based X-ray scattering and spectroscopic techniques. He has been an ACS member since 2010, and has served as the Membership Chair (2015-2017) for the ACS GEOC division. He is now the Secretary (2018-2020) for the division.



### Councilor

Anastasia Ilgen is a staff scientist at Sandia National Laboratories. She is an experimental geochemist, specializing in molecular-level processes at mineral-water interfaces, with emphasis on ion adsorption-desorption rate and mechanisms, chemical controls on mineral growth and dissolution, and surface-mediated redox reactions. She volunteered with the Division since 2013, and became a Councilor in 2019.



### Alternate Councilor

Louise Criscenti is a scientist at Sandia National Laboratories using molecular modeling techniques to address geochemical and chemo-mechanical questions relevant to shale gas extraction, carbon dioxide sequestration, nuclear waste glass dissolution, metal adsorption to oxides, and ion disposition in nanopores. She has served in the volunteer position of Membership Chair (2005-2006; 2011-2012), and in the elected position of Secretary (2006-2008; 2012-2014) for the Geochemistry Division. She is now the Alternate Councilor (2017-2019).



### Webmaster

Juliane Weber is an associate staff scientist at the Lunar and Planetary Laboratory at the University of Arizona. She received her PhD from the RWTH Aachen, Germany and conducted her experimental work at the Forschungszentrum Juelich. Prior to her move to University of Arizona, she was a postdoctoral researcher at Oak Ridge National Laboratory. Her research is focused on understanding the role of microstructure on mineral reaction rates, utilizing high-resolution microscopy and X-ray/neutron scattering techniques.



### Newsletter Editors

Dr. Yandi Hu is an Assistant Professor at University of Houston. Her research utilized advanced nanoscale interfacial characterization techniques to probe reactions at solid-liquid interfaces, as applied to better understand mineral nucleation and growth which are related to the fate and transport of aqueous contaminants and scale formation in many natural and engineered systems.

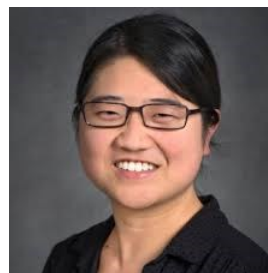


Ning Deng is a Ph.D. candidate at the University of Houston, majoring in environmental engineering. He works in Dr. Yandi Hu's group and studies the nucleation and growth of solid solutions at environmentally relevant interfaces.



### Membership Chair

Hang Deng is a research scientist at Lawrence Berkeley National Lab. She received her PhD degree from Princeton University. Her research utilizes a suite of experimental tools and reactive transport models to investigate mineral-fluid interactions, addressing scientific questions at the center of pressing energy and environmental challenges.



### Social Media Coordinator

Jessica Rimsza is a postdoctoral researcher at Sandia National Laboratory investigating the chemical-mechanical mechanisms which control fracture of silicates using atomistic simulations.

## DIVISION CONTACT INFORMATION

Visit us online at: <https://www.acs.org/geoc>