



DIVISION NEWSLETTER

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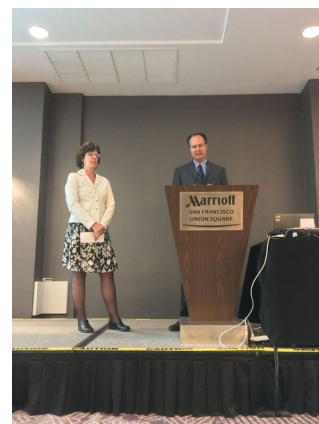
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MESSAGE FROM THE CHAIR

Dear Division Members,

You rock!!! Thank you everyone who came to the **2017 Spring ACS meeting in San Francisco**. We had sixteen sessions, covering topics in interfacial chemistry, nucleation, nano-particle reactivity, geological carbon storage, biominerals, redox, and microbially-mediated chemistry. It was beyond inspiring to see all the incredible research we are involved in. Thank you, **session organizers and presenters**, for another excellent gathering.



At the meeting we awarded the 2017 Geochemistry Medal to **Dr. Susan Brantley**, Distinguished Professor of Geosciences at The Pennsylvania State University and member of the National Academy of Sciences, for her outstanding scientific impact in the fields of geochemistry and Earth surface processes (see p. 3 in this Newsletter).



A special symposium in honor of **Dr. Glenn Waychunas** was organized by Benjamin Gilbert (Lawrence Berkeley National Laboratory), Christopher Kim (Chapman University), and Peggy O'Day (UC Merced) highlighting scientific advances made in the mineral-water interface research over the last three decades.

The Division is proud to support the next generation of geochemists. We awarded five **student travel grants** and our winners were: **Haesung Jung** (Washington University in St. Louis), **Joey Nelson** (Stanford University), **Qian Zhao** (University of Nevada Reno), **Kyeong Phil Kong** (Pennsylvania State University), and **Yue Hui** (Washington University in St. Louis). Additionally, **Joey Nelson** also received the best student presentation award for the presentation "*Effects of nano-confinement and crystallinity on Zn isotope fractionation during adsorption onto silica surfaces*". **Congratulations!!!**

Students – please remember to **join the GEOC Division** and apply for the GEOC student travel grant for the next meeting. We also had some fun catching up with our friends and colleagues at the GEOC Reception.

In 2016 we elected a new Chair-Elect, **Dr. Nadine Kabengi** (Georgia State University) – welcome aboard! Division members also elected **Dr. Louise Criscenti** (Sandia National Laboratories) as Alternate Councilor, and **Dr. Sebastien Kerisit** (Pacific Northwest National Lab) as the Division's Treasurer. Louise has served as the Division's Secretary in the past, and Sebastien has served as the Division Chair-Elect, Program Chair, Division Chair, and Past Chair. Thank you Sebastien and Louise for your continued support of the Division!

We will be electing a Chair-Elect and the Division Secretary later this year. Please remember to vote! Also, please remember to **renew your Geochemistry Division of ACS membership** this year.

Thank you, and I hope that all of you are having a wonderful and productive year, and I hope to see you at the future ACS meetings.

Best regards,

Anastasia G. Ilgen, Ph.D.



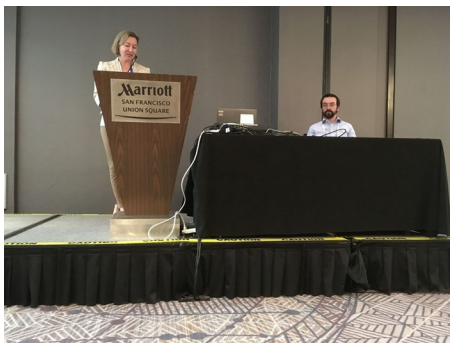
GEOCHEMISTRY MEDAL

It is our great pleasure to announce that Dr. Sue Brantley, Distinguished Professor of Geosciences at the Pennsylvania State University, has been awarded the 2017 Geochemistry Division Medal. Sue is recognized for her outstanding scientific accomplishments and impact in the fields of geochemistry and Earth surface processes, leadership, mentorship of students and junior scientists, and service to the geochemistry community. Her highly influential work on the kinetics of mineral-fluid interactions and weathering rates of natural systems, for example, has truly and profoundly changed our understanding of geochemical systems. Please join us in congratulating Sue!



The 2017 Geochemistry Division Medal Symposium took place at the Spring ACS National Meeting in San Francisco, CA in April. At the Medal Symposium, the Division Medal was presented to Sue by Dr. James Kubicki and invited lectures were given by Profs. Peter Heaney (Penn State University), Jon Chorover (University of Arizona), Alexis Navarre-Sitchler (Colorado School of Mines), Radisav Vidic (University of Pittsburgh), and Sue herself. A two-day symposium in honor of Sue was also held at the San Francisco meeting. This symposium was organized by Prof. Alexis Navarre-Sitchler, who nominated Sue for this award, was open to all to contribute, and featured researchers who have worked with Sue or who have been inspired by her work.

With this opportunity, we would like to thank the medal nominators, the Geochemistry Division Medal Review Committee, consisting of Drs. James Kubicki, Yoko Furukawa, Gregory Druschel, Young-Shin Jun, Sebastien Kerisit, Andrew Stack, and George Luther, and the Chair of the Review Committee, Dr. Kerisit, for their efforts during the review process.



FALL 2017 SESSIONS**General Geochemistry**

The goal of this symposium is to provide an opportunity for presentations on any geochemistry-related research that is not well aligned with the other technical sessions sponsored by the Division.

Symposium organizer: **Bill Burgos**, The Pennsylvania State University, Email: wdb3@psu.edu, **Nadine Kabengi**, Georgia State University, Email: kabengi@psu.edu

Water Chemistry Associated with Energy Production and Extraction

Energy production and extraction often uses large volumes of water and produces large volumes of wastewater. This wastewater requires management because it contains high concentrations of salts and other constituents of concern. A variety of sources generate these wastewaters including: conventional and unconventional oil and gas production, coal-fired power plant wet flue gas desulfurization, mining processing and mine refuse management. The goal of this symposium is to discuss research on water chemistry in a variety of areas with extensive energy production and extraction that include but are not limited to: water-rock interaction, genesis, isotopic tracers, non-targeted analysis of organic micropollutants, microbial processes, treatment, recycle and reuse, and disposal/ remediation practices, regulation, and potential environmental and biological impacts of wastewater treatment and disposal.

Symposium organizers: **Nathaniel Warner**, The Pennsylvania State University, Email: nrw6@psu.edu, **Jeanne VanBriesen**, Carnegie Mellon University, Email: jeanne@cmu.edu

Engineered Nanoparticles in the Environment: Fate, Behavior, and Effects

Advances in manufacturing and new applications have propelled the production and use of a wide variety of engineered nanomaterials (ENM) in all aspects of life, from textiles to paints, from batteries to electronics, from building materials to medicine. The widespread adoption of this class of materials stems from their unique properties compared to conventional materials that facilitate a number of desirable and beneficial effects, and they have become widely studied and increasingly well understood. On the other side of this spectrum, however, it is less certain how these materials behave once they enter the environment. ENM may be released into the environment at any point during the life-cycle of the ENM-containing material, through handling, deterioration, accidental release or disposal. ENM may be more or less toxic than conventional materials, they may be more or less mobile, and they may be more or less persistent. What is the fate of these ENM? What is their behavior once they get there? What effects can they cause to environmental ecosystems? What is their bioavailability? Do they change chemically or morphologically, stabilize or deteriorate over time? Does it depend where or how they are released?

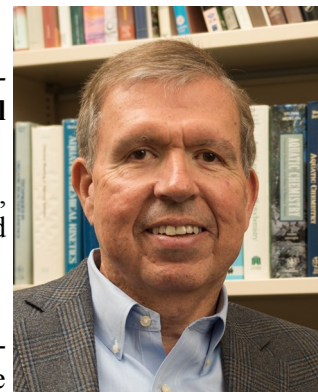
The aim of this symposium is to bring together experts who addressing these uncertainties and developing the knowledge base for safe use of ENM. We invite submissions that promote discoveries at the intersection of geochemistry, materials science, ecology and environmental sciences to address these and more questions. We seek submissions that look not only at understanding how currently produced ENM nanomaterials behave in the environment (do they accumulate in sediment, remain suspend in water, or volatilize into the air), but also that are developing tools for predicting their behavior (e.g. fate descriptors) based on fundamental principles and material properties.

Symposium organizers: **Emily Yi Wai Chiang**, University of Guelph, Email: chiange@uoguelph.ca, **Rafael M. Santos**, Sheridan College Institute of Technology and Advanced Learning, Email: rafael.santos@sheridancollege.ca

CALL FOR PAPERS: SPECIAL ISSUE HONORING PROF. DONALD SPARKS

We are excited to announce a call for papers for a special issue of *Geochemical Transactions* in honor of **Prof. Donald Sparks: “Frontiers and Advances in Environmental Soil Chemistry”**.

Guest Editors: Young-Shin Jun (Washington University in St. Louis, ysjun@wustl.edu), Mengqiang Zhu (University of Wyoming, mzhu6@uwyo.edu), and Derek Peak (University of Saskatchewan, derek.peak@usask.ca)



In 2015, Dr. Donald L. Sparks, Professor of Plant and Soil Science, Chemistry and Biochemistry, Civil and Environmental Engineering, University of Delaware, received the American Chemical Society’s Geochemistry Division Medal for his highly influential and transformative work in geochemistry, environmental chemistry, and soil chemistry; his outstanding record as an educator and mentor; and his service to the geochemical community. To celebrate and honor Prof. Sparks’ life-long research interests and achievements, we invite experts and colleagues who share this scientific sphere with Prof. Sparks to submit papers for a special issue. This honorary issue will highlight important challenges in environmental geochemistry and soil chemistry and will introduce current advances in these areas. We also like to bring together a series of research articles exemplifying recent developments in state-of-the-art experimental and numerical approaches toward understanding mineral-water interfaces. For this special issue, Prof. Sparks has kindly agreed to write a feature article sharing his scientific and philosophical views on Environmental Soil Chemistry. The topics of particular interest are given below, though the list is not exclusive.

Surface adsorption, surface complexation modeling, surface precipitation, surface electron transfer, contaminant dynamics in the environment, speciation of metals in contaminated soils and metal plant hyperaccumulators, phosphorous in soils, soil organic carbon-mineral interaction, spectroscopic techniques in studying soil chemical processes, and thermodynamics and kinetics of biogeochemical processes.

Our desired manuscript submission due date is August 31, 2017, but because the special issue will be published in an open access journal, *Geochemical Transactions*, Springer Nature (the ACS Geochemistry Division’s official journal), your submission date can vary. Please let us know if you like to have a more time. When your manuscript is published, you can cite your paper immediately using the assigned DOI information.

We see this is an excellent opportunity, both to honor Prof. Sparks’ enduring accomplishments in Environmental Geochemistry and Soil Chemistry and to share your new developments. If you have any questions, please feel free to contact us. We look forward to hearing from you.

Yours sincerely,

Young-Shin Jun (ysjun@wustl.edu)

Mengqiang Zhu (mzhu6@uwyo.edu)

Derek Peak (derek.peak@usask.ca)

Samuel Winthrop, Senior Journal Development Editor, samuel.winthrop@springer.com

Submission guideline: <https://geochemicaltransactions.springeropen.com/submission-guidelines>

ELECTION INFORMATION

WANTED: A Few Good Geochemists

Elections may be a few months away, but the Geochemistry Division is soliciting candidates for Program-Chair Elect and Secretary. Elected officers will assume their roles in January 2018. A brief description of each role is provided below. If you are interested in this great networking opportunity, please contact Secretary, Frannie Smith (Frances.Smith@pnnl.gov), and Division Chair, Anastasia Ilgen (agilgen@sandia.gov) for more details. Thank you!

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.

Secretary (3 year term): This officer keeps a written record of Executive Committee meetings and helps to prepare and submit the annual report of the Division to the SOCIETY. This officer (or an appointed Membership Chair) maintains a list of current members and helps disseminate information to the Division via email communications. This officer helps coordinate elections.

Note: Self-nominations and consensual nominations of colleagues are encouraged. Per our Bylaws, all nominations must be accompanied by at least 10 signatures of support from current ACS GEOC Members. The Secretary will work with interested members to facilitate this process. All nominees must have been a Member of the Division for at least one year at the time of nomination. For more

CALL FOR SEESIONS: ACS 2018

Call for Sessions for the 255th ACS National Meeting & Exposition, March 18-22, 2018, New Orleans, Louisiana

Please consider organizing a technical session for the upcoming ACS meeting in New Orleans. Like San Francisco, we expect this to be a well-attended meeting with many international participants. The success of the meeting, and our Division's contribution, depends on volunteers like you to envision exciting session topics and invite the best people in the world to contribute. **Session proposals are due July 3, 2017.**

DIVISION OFFICERS & COMMITTEES

Division Chair

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 Chair-Elect in 2015.



Program 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.

Past Division Chair

Young-Shin Jun is the Division Chair of the American Chemical Society's Geochemistry Division, after serving as the Program Chair-Elect (2014) and Program Chair (2015) of Geochemistry Division. Her research group aims at improving our understanding of the fate and transport of contaminants and nanoparticles, providing more environmentally sustainable CO₂ sequestration strategies, and elucidating physicochemical reaction mechanisms occurring in water treatment processes.



Program Chair Elect



Nadine Kabengi is an assistant 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. She was elected as Program-Chair elect in 2017 and will assume her role in 2018. In her free time, she enjoys binge-watching TV and internet series.

Treasurer and Awards Committee Chair

Committee

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 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 recently 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. Most recently, Sebastien served as Chair of the Geochemistry Division Medal

Councilor

James Kubicki is a professor and chair in Geological Sciences at the University of Texas at El Paso working on computational chemistry of environmentally relevant reactions. He just started as the Councilor for the division in 2016. In his free time, he enjoys ironing and listening to Weird Al. James Kubicki was the Program Chair-Elect/Program Chair/Chair in the division in 2004-2006. His current research involves modeling mineral-water interfaces, cellulose and plant cell wall components, and nanoparticle surface reactivity. His favorite geo-material is soot or black carbon because it is so disorganized.

*Secretary*

Frances (Frannie) Smith is a scientist in the Nuclear Chemistry and Engineering Group at Pacific Northwest National Laboratory. She uses atomic-scale modeling methods to explore trace-metal and radionuclide incorporation into mineral phases related to the nuclear fuel cycle. Frannie previously served as Chair of the Richland Local Section of the ACS (2013) and enjoys collaborating with colleagues from across the country as Secretary of the Geochemistry Division.

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). In her free time, she enjoys gardening, seeing new places, and reading science fiction.

*Webmaster*

Jacquelyn (Jacky) Bracco is a postdoctoral researcher at Argonne National Laboratory studying the structure and reactivity of barite using atomic force microscopy and x-ray reflectivity. She has been the assistant webmaster/webmaster for the division since 2013. In her free time, she enjoys gardening, yoga, and hiking.

Membership Chair

Sang Soo Lee is a staff scientist at Argonne National Laboratory. His research focuses on studying atomic-scale processes occurring at mineral-water interfaces using synchrotron-based x-ray scattering techniques. He has been the Membership chair for the division since 2015.

*Newsletter Editor*

Omanjana Goswami is a graduate student at Rutgers University-Newark, majoring in environmental sciences. She works with Dr. Ashaki Rouff and studies the metal-mineral interaction in natural and engineered wastewater environments.

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: <http://geochemistrydivision.sites.acs.org/>