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Education and Training

Post Doc.	Environmental Molecular Science Institute	Columbia University	2000-2003
	Advisors: George W. Flynn, Richard M. Osgood, Jr. & Peter Schlosser		
Ph.D.	Geochemistry	Stanford University	1999
	Advisors: Gordon E. Brown, Jr. & George A. Parks		
B.A.	History and Political Science	Duke University	1990

Research and Professional Experience

Research Scholar (May 2012-present) Department of Civil and Environmental Engineering, Princeton University, Princeton, NJ; Research into mitigating human health and environmental impacts of energy generation, waste management and climate change.

Vice Chair (2016-2018) National Synchrotron Light Source II Users Executive Committee; Communicating synchrotron x-ray user science to Congress, DOE and BNL management.

Scientific Consultant (October 2015-February 2016) Tideline Advisors, New York, NY; Developed sustainable finance strategies to address social, environmental and climate problems.

Geochemist (2007-2012), Environmental Sciences Department, Brookhaven National Laboratory, Upton, NY; Associate Geochemist (2005-2007); Assistant Geochemist (2003-2005); Principal Investigator on DOE Offices of Science and Fossil Energy funded projects to study carbon sequestration, nanomaterials reactivity and risk assessments, and contaminant fate and transport in the subsurface.

Research Scientist (2000-2003), Langmuir Fellow in Environmental Molecular Sciences, Department of Chemistry, Columbia University, New York, NY; Integrated research teams from Chemistry, Electrical Engineering and Applied Physics Departments to study chloro-carbon reactions on mineral surfaces and structures of mineral-water interfaces.

Research Assistant & Teaching Assistant (1994-1999), Stanford University, Palo Alto, CA; Managed X-Ray Laboratory and research focused on applying synchrotron-based x-ray spectroscopy to metal ion and mineral interfacial geochemistry.

Research Assistant (1991-1993), United States Geological Survey, Menlo Park, CA; Primary responsibility on a paleoclimate research project was to quantify carbon geochemistry in a 300m sediment core from Owens Valley, CA.

Undergraduate Student Advising at Princeton University

- Gabrielle Rogers, Senior Thesis (CBE, 2016) Princeton University.
- William Arendt (CEE, 2016) and Jeffrey Chen (Chem, 2017) PEI Summer 2015 Interns.

Graduate Student co-Advising

- Current: Sassan Hajirezale (PhD Pre-candidate), Heather Hunter (PhD Pre-candidate), Kasparas Spokas (PhD candidate), Civil & Environmental Engineering, Princeton University

- Bin Gou (2015); Hang Deng (2015); Brian R. Ellis, PhD (2012), Juan P. Nogués PhD (2012), and Zhongxuan Jai MA (2013) Dept. Civil & Environmental Engineering, Princeton University
- Gautier Landrot, PhD (2010) Dept. of Plant and Soil Sci., University of Delaware
- Tom Hennebel, PhD (2010) Lab Micro. Ecology and Tech., Ghent University, Belgium
- Bjorg Larson, PhD (2008) Dept. of Physics, Stony Brook University
- Yuanzhi Tang, PhD (2008) Geosciences Dept., Stony Brook University

Postdoctoral Advising & Faculty Mentoring

- Current co-Advisor: Florence T. Ling (Princeton CEE); Dana Caulton (Princeton CEE).
- Antoine E. Morandea (Princeton CEE 2014-2015) Assistant Professor, CRANS, France.
- Tom Hennebel (UC Berkeley 2012-2014) R&D Project Manager, Umicore, Belgium.
- Ashaki Rouff (Queens College City University of New York, Woodrow Wilson Fellowship 2011-2012, served as faculty mentor) Assistant Prof. Rutgers University.
- Dev Chidambaram (BNL 2009-2011) Assistant Prof. University of Nevada.
- David Moreels (BNL 2007-2009) Study Director at Toxikon Europe NV.
- Garry Crosson (BNL 2006-2008) Assistant Professor University of Dayton.

Teaching and guest lectures

- “*Characterizing chemical speciation using X-ray Absorption Spectroscopy*” guest lecture in CEE 506 Synchrotron and Neutron Studies of Materials (Assistant Prof. Claire White) November 5, 2014 & November 15, 2015.
- “*Challenges to making informed decisions about shale gas development*” guest lecture in WWS 591C Policy Workshop - State Policies on Hydrofracking (Prof. Denise L. Mauzerall) October 6, 2014.
- “*Environmental remediation of radionuclides*” lectures for US Department of Energy Nuclear Summer School at Brookhaven National Laboratory, Upton, NY (2008-2011).

Publications

Chapters in Books

1. Fitts, J. P.; Peters, C. A., Caprock Fracture Dissolution and CO₂ Leakage. In *Geochemistry of Geologic CO₂ Sequestration*, Depaolo, D. J.; Cole, D. R.; Navrotsky, A.; Bourg, I. C., Eds. Mineralogical Society of America: **2013**, 77, 459-479.
2. Hennebel, T.; Fitts, J. P.; Van Nevel, S.; Boon, N., Pd nanocatalysts for PCB removal. In *Nanotechnology for Water and Wastewater Treatment*, Lens, P.; Virkutyte, J.; Jegatheesan, V.; Kim, S.-H.; Al-Abed, S., Eds. IWA Publishing: London, UK, **2013**; p 350.

Articles published in refereed journals

3. Fang, Y.; Elsworth, D.; Wang, C.; Ishibashi, T.; Fitts, J. P., Frictional Stability-Permeability Relationships for Fractures in Shales. *Journal of Geophysical Research: Solid Earth* **2017**, 122 <http://dx.doi.org/10.1002/2016JB013435>.

4. Maes, S.; Props, R.; Fitts, J. P.; De Smet, R.; Vanhaecke, F.; Boon, N.; Hennebel, T., Biological Recovery of Platinum Complexes from Diluted Aqueous Streams by Axenic Cultures. *PLOS ONE* **2017**, *12*, (1), e0169093.
5. Pierce, E. M.; Lilova, K.; Missimer, D. M.; Lukens, W. W.; Wu, L.; Fitts, J.; Rawn, C.; Huq, A.; Leonard, D. N.; Eskelsen, J. R.; F. Woodfield, B.; Jantzen, C. M.; Navrotsky, A., Structure and Thermochemistry of Perrhenate Sodalite and Mixed Guest Perrhenate/Pertechnetate Sodalite. *Environmental Science & Technology* **2017**, *51*, (2), 997-1006.
6. Tao, Z.; Fitts, J.P.; Clarens, A.F., Feasibility of Carbonation Reactions to Control Permeability in the Deep Subsurface. *Environmental Engineering Science* **2016**, *33*, (10), 778-790.
7. Bielicki, J.M.; Pollak, M.F.; Deng, H.; Wilson, E.J.; Fitts, J.P.; Peters, C.A., The Leakage Risk Monetization Model for Geologic CO₂ Storage. *Environmental Science & Technology* **2016** *50*(10), 4923-4931.
8. Deng, H.; Fitts, J. P.; Peters, C. A., Quantifying fracture geometry with X-ray tomography: Technique of Iterative Local Thresholding (TILT) for 3D image segmentation. *Computational Geosciences* 1-14, DOI 10.1007/s10596-016-9560-9, **2016**.
9. Maes, S.; Props, R.; Fitts, J.P.; Smet, R.D.; Vilchez-Vargas, R.; Vital, M.; Pieper, D.H.; Vanhaecke, F.; Boon, N.; Hennebel, T., Platinum Recovery from Synthetic Extreme Environments by Halophilic Bacteria. *Environmental Science & Technology* **2016**, *50*(5), 2619-2626.
10. Morandau, A.E.; Fitts, J.P.; Lee, H.D.; Shubeita, S.M.; Feldman, L.C.; Gustafsson, T.; White, C.E., Nanoscale heterogeneities in a fractured alkali-activated slag binder: A helium ion microscopy analysis. *Cement and Concrete Research* **2016**, *79*, 45-48.
11. Leijonhufvud, C. and Fitts, J.P., Global Warming's Unlikely Antidote: Why capital markets hold the key to addressing climate change. *Social Research* **2015**, *82*, (3), 761-781. (pdf)
12. Deng, H.; Fitts, J. P.; Peters, C. A., Alterations of Fractures in Carbonate Rocks by CO₂-Acidified Brines. *Environmental Science & Technology* **2015**, *49*(16), 10226–10234.
13. Zhuang, W.-Q.; Fitts, J.P.; Ajo-Franklin, C.M.; Maes, S.; Hennebel, T., Recovery of critical metals using biometallurgy. *Current Opinion in Biotechnology* **2015** *33*, 327-335.
14. Bielicki, J.M.; Peters, C.A.; Fitts, J. P.; Wilson, E.J., An examination of geologic carbon sequestration policies in the context of leakage potential. *International Journal of Greenhouse Gas Control* **2015**, *37*, 61-75.
15. Deng, H.; Bielicki, J.M.; Oppenheimer, M.; Fitts, J.P.; Peters, C.A., A Methodology for Monetizing Basin-Scale Leakage Risk and Stakeholder Impacts. *Energy Procedia* **2014**, *63*:6852-6863.
16. Pierce, E.M.; Lukens, W.W.; Fitts, J.P.; Jantzen, C.M.; Tang, G., Experimental determination of the speciation, partitioning, and release of perrhenate as a chemical surrogate for pertechnetate from a sodalite-bearing multiphase ceramic waste form. *Applied Geochemistry* **2014**, *42*, (0), 47-59.

17. Bielicki, J.M.; Pollak, M.F.; Fitts, J.P.; Peters, C.A.; Wilson, E.J., Causes and Financial Consequences of Geologic CO₂ Storage Reservoir Leakage and Interference with other Subsurface Resources. *International Journal of Greenhouse Gas Control* **2014**, *20*, 272-284.
18. Dahl, T.W.; Chappaz, A.; Fitts, J.P.; Lyons, T.W., Molybdenum reduction in a sulfidic lake: Evidence from X-ray absorption fine-structure spectroscopy and implications for the Mo paleoproxy. *Geochim. Cosmochim. Acta* **2013**, *103*, (0), 213-231.
19. Deng, H.; Ellis, B.R.; Peters, C.A.; Fitts, J.P.; Crandall, D.; Bromhal, G.S., Modifications of carbonate fracture hydrodynamic properties by CO₂-acidified brine flow. *Energy & Fuels* **2013**, *27*, (8), 4221-4231.
20. Ellis, B.R.; Fitts, J.P.; Bromhal, G.S.; McIntyre, D.L.; Tappero, R.; Peters, C. A., Dissolution-Driven Permeability Reduction of a CO₂ Leakage Pathway in a Carbonate Caprock. *Environmental Engineering Science*, **2013**, *30*, (4), 187-193.
21. Johnson, A.; Merilis, G.; Hastings, J.; Palmer, M.E.; Fitts, J.P.; Chidambaram, D., Reductive Degradation of Organic Compounds Using Microbial Nanotechnology. *Journal of the Electrochemical Society* **2013**, *160*, (1), G27-G31.
22. Bielicki, J. M.; Pollak, M. F.; Wilson, E. J.; Fitts, J. P.; Peters, C. A., A Methodology for Monetizing Basin-Scale Leakage Risk and Stakeholder Impacts. *Energy Procedia* **2013**, *37*, 4665-4672.
23. Pollak, M. F.; Bielicki, J. M.; Dammel, J. A.; Wilson, E. J.; Fitts, J. P.; Peters, C. A., The Leakage Impact Valuation (LIV) Method for Leakage from Geologic CO₂ Storage Reservoirs. *Energy Procedia* **2013**, *37*, 2819-2827.
24. Nogues, J. P.; Fitts, J. P.; Celia, M. A.; Peters, C. A., Permeability evolution due to dissolution and precipitation of carbonates using reactive transport modeling in pore networks. *Water Resources Research* **2013**, *49*, 1-16.
25. Kumpiene, J.; Fitts, J. P.; Mench, M., Arsenic Fractionation in Contaminated Mining Spoils 10 Years after Amendment. *Environmental Pollution* **2012**, *166*, 82-88.
26. Fitts, J. P. & Thieme, J., Looking into the nanoworld using X-rays. Edited special issue of *Chemical Geology* **2012**, *329*, 1-2.
27. Landrot, G.; Ginder-Vogel, M.; Livi, K.; Fitts, J. P.; Sparks, D. L., Chromium(III) Oxidation by Three Poorly-Crystalline Manganese(IV) Oxides. 1. Chromium(III)-Oxidizing Capacity. *Environmental Science & Technology* **2012**, *46*, (21) 11594-11600.
28. Landrot, G.; Ginder-Vogel, M.; Livi, K.; Fitts, J. P.; Sparks, D. L., Chromium(III) Oxidation by Three Poorly Crystalline Manganese(IV) Oxides. 2. Solid Phase Analyses. *Environmental Science & Technology* **2012**, *46*, (21) 11601-11609.
29. Ellis, B.R., Peters, C.A., Fitts, J.P., Bromhal, G.S., McIntyre, D.L., Warzinski, R.P., Rosenbaum, E.J., Deterioration of a fractured carbonate caprock exposed to CO₂-acidified brine flow. *Greenhouse Gases: Science and Technology* **2011**, *1* (3) 248-260.

30. Elzinga, E.J., Gao, Y., Fitts, J.P., and Tappero, R., Iron speciation in urban dust. *Atmospheric Environment* **2011**, 45 (26) 4528-4532.
31. Kumpiene, J., Mench, M., Bes, C. M., and Fitts, J.P., Assessment of aided phytostabilization of copper-contaminated soil by X-ray absorption spectroscopy and chemical extractions. *Environmental Pollution* **2011**, 159 (6) 1536-1542.
32. De Corte, S., Hennebel, T., Fitts, J.P., Sabbe, T., Bliznuk, V., Verschuere, S., van der Lelie, D., Verstraete, W., Boon, N., Bio-supported bimetallic Pd-Au nanocatalysts for dechlorination of environmental contaminants. *Environmental Science & Technology* **2011** 45 (19) 8506–8513.
33. Hennebel, T., van Nevel, S., Verschuere, S., De Corte, S., De Gussemme, B., Cuvelier, C., Fitts, J.P., van der Lelie, D., Boon, N., Verstraete, W., Palladium nanoparticles produced by fermentatively cultivated bacteria as catalyst for diatrizoate removal with biogenic hydrogen. *Applied Microbiology and Biotechnology* **2011**, 91 (5) 1435-1445.
34. Johnson, A., Merilis, G., Hastings, J., Palmer, M. E., Fitts, J. P., and Chidambaram, D., 'Nanotechnology and Microbial Electrochemistry for Environmental Remediation', *Electrochemical Society Transactions* **2011**, 33 (38) 103-112.
35. De Gussemme, B., Hennebel, T., Christiaens, E., Saveyn, H., Verbeken, K., Fitts, J.P., Boon, N., Verstraete, W., Virus Disinfection in Water by Biogenic Silver Immobilized in Polyvinylidene Fluoride Membranes. *Water Research* **2011**, 45 (4) 1856-1864.
36. De Gussemme, B., Du Laing, G., Hennebel, T., Renard, P., Chidambaram, D., Fitts, J. P., Bruneel, E., van Driessche, I., Verbeken, K., Boon, N., Verstraete, W., Biogenic cerium exhibits virucidal properties. *Environmental Science & Technology* **2010**, 44 (16) 6350–6356.
37. Chidambaram, D.; Hennebel, T.; Taghavi, S.; Mast, J.; Boon, N.; Verstraete, W.; van der Lelie, D.; Fitts, J. P., Concomitant Microbial Generation of Palladium Nanoparticles and Hydrogen To Immobilize Chromate. *Environmental Science & Technology* **2010**, 44, (19) 7635-7640.
38. Moreels, D.; Crosson, G.; Garafola, C.; Monteleone, D.; Taghavi, S.; Fitts, J. P.; van der Lelie, D., Microbial community dynamics in uranium contaminated subsurface sediments under biostimulated conditions with high nitrate and nickel pressure. *Environmental Science and Pollution Research* **2008**, 15 (6) 481-491.
39. Fthenakis, V. M.; Fuhrmann, M.; Heiser, J.; Lanzirrotti, A.; Fitts, J.; Wang, W., Emissions and encapsulation of cadmium in CdTePV modules during fires. *Prog. Photovoltaics* **2005**, 13 (8), 713-723.
40. Fitts, J. P.; Shang, X. M.; Flynn, G. W.; Heinz, T. F.; Eienthal, K. B., Electrostatic surface charge at aqueous/ α -Al₂O₃ single-crystal interfaces as probed by optical second-harmonic generation. *Journal of Physical Chemistry B* **2005**, 109 (16) 7981-7986.
41. Fitts, J. P.; Machesky, M. L.; Wesolowski, D. J.; Shang, X. M.; Kubicki, J. D.; Flynn, G. W.; Heinz, T. F.; Eienthal, K. B., Second-harmonic generation and theoretical studies of protonation at the water/ α -TiO₂ (110) interface. *Chem. Phys. Lett.* **2005**, 411 (4-6), 399-403.
42. Fuhrmann, M.; Fitts, J. P., Adsorption of trace metals on glass fiber filters. *J. Environ. Qual.* **2004**, 33 (5), 1943-1944.

43. Rim, K. T.; Muller, T.; Fitts, J. P.; Adib, K.; Camillone, N.; Osgood, R. M.; Batista, E. R.; Friesner, R. A.; Joyce, S. A.; Flynn, G. W., Scanning tunneling microscopy and theoretical study of competitive reactions in the dissociative chemisorption of CCl₄ on iron oxide surfaces. *J. Phys. Chem. B* **2004**, *108* (43), 16753-16760.
44. Bargar, J. R.; Trainor, T. P.; Fitts, J. P.; Chambers, S. A.; Brown, G. E., In situ grazing-incidence extended X-ray absorption fine structure study of Pb(II) chemisorption on hematite (0001) and (1-102) surfaces. *Langmuir* **2004**, *20* (5), 1667-1673.
45. Rim, K. T.; Fitts, J. P.; Muller, T.; Adib, K.; Camillone, N.; Osgood, R. M.; Joyce, S. A.; Flynn, G. W., CCl₄ chemistry on the reduced selvedge of a alpha-Fe₂O₃(0001) surface: a scanning tunneling microscopy study. *Surf. Sci.* **2003**, *541* (1-3), 59-75.
46. Adib, K.; Totir, G. G.; Fitts, J. P.; Rim, K. T.; Mueller, T.; Flynn, G. W.; Joyce, S. A.; Osgood, R. M., Chemistry of CCl₄ on Fe₃O₄(111)-(2 x 2) surfaces in the presence of adsorbed D₂O studied by temperature programmed desorption. *Surf. Sci.* **2003**, *537* (1-3), 191-204.
47. Adib, K.; Mullins, D. R.; Totir, G.; Camillone, N.; Fitts, J. P.; Rim, K. T.; Flynn, G. W.; Osgood, R. M., Dissociative adsorption of CCl₄ on the Fe₃O₄(111)-(2 x 2) selvedge of alpha-Fe₂O₃(0001). *Surf. Sci.* **2003**, *524* (1-3), 113-128.
48. Camillone, N.; Adib, K.; Fitts, J. P.; Rim, K. T.; Flynn, G. W.; Joyce, S. A.; Osgood, R. M., Surface termination dependence of the reactivity of single crystal hematite with CCl₄. *Surf. Sci.* **2002**, *511* (1-3), 267-282.
49. Adib, K.; Camillone, N.; Fitts, J. P.; Rim, K. T.; Flynn, G. W.; Joyce, S. A.; Osgood, R. M., CCl₄ chemistry on the magnetite selvedge of single-crystal hematite: competitive surface reactions. *Surf. Sci.* **2002**, *497* (1-3), 127-138.
50. Trainor, T. P.; Fitts, J. P.; Templeton, A. S.; Grolimund, D.; Brown, G. E., Grazing-incidence XAFS study of aqueous Zn(II) sorption on alpha-Al₂O₃ single crystals. *J. Colloid Interface Sci.* **2001**, *244* (2), 239-244.
51. Fitts, J. P.; Brown, G. E.; Parks, G. A., Structural evolution of Cr(III) polymeric species at the gamma-Al₂O₃/water interface. *Environ. Sci. & Tech.* **2000**, *34* (24), 5122-5128.
52. Trainor, T. P.; Fitts, J. P.; Grolimund, D.; Bargar, J. R.; Brown, G. E., Grazing-incidence XAFS studies of aqueous Zn(II) on sapphire single crystals. *J. Synchrotron Radiat.* **1999**, *6*, 618-620.
53. Grolimund, D.; Trainor, T. P.; Fitts, J. P.; Kendelewicz, T.; Liu, P.; Chambers, S. A.; Brown, G. E., Identification of Cr species at the aqueous solution-hematite interface after Cr(VI)-Cr(III) reduction using GI-XAFS and Cr L-edge NEXAFS. *J. Synchrotron Radiat.* **1999**, *6*, 612-614.
54. Fitts, J. P.; Trainor, T. P.; Grolimund, D.; Bargar, J. R.; Parks, G. A.; Brown, G. E., Grazing-incidence XAFS investigations of Cu(II) sorption products at alpha-Al₂O₃-water and alpha-SiO₂-water interfaces. *J. Synchrotron Radiat.* **1999**, *6*, 627-629.
55. Fitts, J. P.; Persson, P.; Brown, G. E.; Parks, G. A., Structure and bonding of Cu(II)-glutamate complexes at the gamma-Al₂O₃-water interface. *J. Coll. & Inter. Sci.* **1999**, *220* (1), 133-147.

56. Bischoff, J. L., Fitts, J. P., and Fitzpatrick, J. A., Responses of sediment geochemistry to climate change in Owens Lake sediment: An 800-k.y. record of saline/fresh cycles in core OL-92, in Smith, G. I., and Bischoff, J. L., eds., *An 800,000-Year Paleoclimatic Record from Core OL-92, Owens Lake, Southeast California: Boulder, Colorado, Geological Society of America Special Paper 317, 1997.*
57. Bischoff, J. L.; Menking, K. M.; Fitts, J. P.; Fitzpatrick, J. A., Climatic oscillations 10,000-155,000 yr B.P. at Owens Lake, California reflected in glacial rock flour abundance and lake salinity in core OL-92. *Quaternary Research* **1997**, 48 (3) 313-325.

Select articles published in non-refereed journals; non-refereed reports, abstracts of papers delivered at meetings; miscellaneous publications

1. D. Caulton, J. P. Fitts, L. Golston, H. Lane, J. Lu, Q. Li, D. Pan, E. Bou-Zeid, and M. A. Zondlo “*Observations and Results from 750 Well Pads in the Marcellus Shale*”, Invited oral presentation A22G-04 presented at AGU Fall Meeting, San Francisco, CA, Dec **2016**.
2. A Lanzirotti, S Sutton, M Newville, J Fitts, E Head, “*High Energy Synchrotron X-ray Microspectroscopy for Geochemical Characterization of Terrestrial and Extraterrestrial Samples*”, *Geological Society of America Annual Meeting*, Vol 48, p. 35-2, sponsored by Geological Society of America, Sep **2016**.
3. J.P. Fitts, A. Lanzirotti, A. Acerbo, C. Yong, B. Dazas, X. Huang, E. Nazaretski, G. Rogers, K. Spokas, R. Tappero, H. Yan, C. Peters, “*Salinity effects on arsenic incorporation during barite precipitation treatment of idealized shale gas wastewaters*”, 252nd American Chemical Society National Meeting & Exposition, Philadelphia, United States, Aug **2016**.
4. D. Elsworth, J. P. Fitts and C. A. Peters “*Geophysical and Mineralogical Controls on the Rheology of Fracture Slip and Seal Breaching*” Oral presentation given at 2015 Carbon Storage R&D Project Review Meeting, Pittsburgh, PA, Aug **2016**.
5. C. Peters, K. Spokas, L. Pyrak-Nolte, J. Fitts. “*Permeability evolution in fractures exposed to reactive flow and normal stress: Fracture sealing vs. run-away flow*” INTERPORE, Cincinnati, OH, USA May 9-12, **2016**.
6. D. Caulton, L. Golston, Q. Li, E. Bou-Zeid, D. Pan, H. Lane, J. Lu, J. P. Fitts and M. A. Zondlo “*Assessment and mitigation of errors associated with a large-scale field investigation of methane emissions from the Marcellus Shale*”, presented at EGU Meeting, Vienna, Austria, April **2016**.
7. K. Spokas, Catherine A Peters, Laura J Pyrak-Nolte, Joseph Morris, Jeffrey P Fitts and Hang Deng “*Coupling stress and reactive transport in fractures: Effects on contacting asperities, permeability and stiffness*”, Oral presentation H43K-05 given at AGU Fall Meeting, San Francisco, CA, Dec **2015**.
8. D. Caulton, L. Golston, Q. Li, E. Bou-Zeid, D. Pan, H. Lane, J. Lu, J. P. Fitts and M. A. Zondlo “*Assessment and mitigation of errors associated with a large-scale field investigation of*

- methane emissions from the Marcellus Shale*”, Poster A43F-0350 presented at AGU Fall Meeting, San Francisco, CA, Dec **2015**.
9. J. P. Fitts, H. Hunter, K. Spokas and C. A. Peters, “*Contaminant mobilization from shale during hydrofracking and gas production*” Invited oral presentation GEOC 56 given at 250th ACS National Meeting, Boston, MA, Aug **2015**.
 10. H. Deng, Jeffrey P. Fitts, Catherine Peters, “*Geochemical alterations of carbonate fractures*”, Poster presented at 250th ACS National Meeting, Boston, MA, Aug **2015**.
 11. D. Elsworth, J. P. Fitts and C. A. Peters “*Geophysical and Mineralogical Controls on the Rheology of Fracture Slip and Seal Breaching*” Oral presentation given at 2015 Carbon Storage R&D Project Review Meeting, Pittsburgh, PA, Aug **2015**.
 12. J. P. Fitts, H. Hunter, K. Spokas and C. A. Peters “*Forecasting contaminant mobilization from shale into gas production wastewaters*”, 2015 AEESP Research and Education Conference, Yale University, June **2015**.
 13. Z. Tao; J. P. Fitts and A. F. Clarens “*Carbonation of wollastonite in a shale matrix*”, 2015 AEESP Research and Education Conference, Yale University, June **2015**.
 14. H. Deng; Bielicki, J.M.; Oppenheimer, M.; Fitts, J.P.; Peters, C.A. “*How leakage risk in geologic CO₂ storage might impact climate change mitigation and policy choices*”, Poster F-32 presented at 2015 AEESP Research and Education Conference, Yale U., June **2015**.
 15. H. Deng; Fitts, J.P.; Peters, C.A. “*Geochemical alterations of carbonate fractures and the environmental implications*”, Poster F-31 presented at 2015 AEESP Research and Education Conference, Yale University, June **2015**.
 16. H. Deng, J.M. Bielicki, M. Oppenheimer, J.P. Fitts, C.A. Peters “*Accounting for the leakage risk of geologic CO₂ storage and its impacts on climate mitigation and the global energy system.*” Fourteenth Annual Conference on Carbon Capture, Utilization & Storage. Pittsburgh, PA, May **2015**.
 17. J.P. Fitts, H. Deng, C.A. Peters “*How reactive fluids alter fracture walls and affect shale-matrix accessibility*” Abstract H14D-06 oral presentation at 2014 AGU Fall Meeting, San Francisco, CA December 15, **2014**.
 18. J.M. Bielicki, C.A. Peters, J.P. Fitts, E.J. Wilson “*Geologic Carbon Sequestration: Leakage Potential and Policy Implications*” Poster H51J-0740 given at 2014 presented at AGU Fall Meeting, San Francisco, CA December 19, **2014**.
 19. C.A. Peters, H. Deng, J.M. Bielicki, J.P. Fitts, M. Oppenheimer “*How CO₂ Leakage May Impact the Role of Geologic Carbon Storage in Climate Mitigation*” Abstract GC41B-0565 poster presented at 2014 AGU Fall Meeting, San Francisco, CA December 18, **2014**.
 20. H. Deng J.P. Fitts, D. Crandall, D. McIntyre, C.A. Peters “*Permeability evolution of fractured limestone due to reactive flow: Observation and prediction of wormhole formation*” Abstract H51B-0601 poster presented at AGU Fall Meeting, San Francisco, CA December 19, **2014**.

21. B. Guo, J.P. Fitts, C.A. Peters “*Development of two simplified geochemical models for permeability evolution due to calcite dissolution in preferential pathways in caprock*” Abstract H41F-0897 poster presented at 2014 AGU Fall Meeting, San Francisco, CA December 18, **2014**.
22. C.A. Peters, H. Deng, J.P. Fitts “*Challenges in reactive transport modeling for prediction of geometry evolution in fractured carbonate rocks*” INVITED Abstract H51R-01 presented at 2014 AGU Fall Meeting, San Francisco, CA December 17, **2014**.
23. H. Deng, J.M. Bielicki, M. Oppenheimer, J.P. Fitts, C.A. Peters “*Policy implications of Monetized Leakage Risk from Geologic CO₂ Storage Reservoirs*” oral presentation at The 13th International Conference on Greenhouse Gas Technologies, Austin, TX October 6, **2014**.
24. J.P. Fitts, H. Deng, R. Tappero, C.A. Peters. “*Spatial Variation of Dissolution at Fracture Boundaries*” US Department of Energy Triennial Review of Photon Sciences, Brookhaven National Lab, Upton, NY September 23, **2014**.
25. C. Leijonhufvud, Fitts, J.P. “*Divesting and Investing for the Environment*” presented at The New School Center for Public Scholarship Conference on “Climate Change Demands We Change” New York, NY April 25, **2014**.
26. J.P. Fitts. “*The Current State of CO₂ Utilization*” presented at the Annual Workshop for the Research Coordination Network on Carbon Capture Utilization and Storage. New York, NY April 14-16, **2014**.
27. C.A. Peters, H. Deng, B. Guo, J.P. Fitts “*Reactive Transport Challenges for Predicting Permeability Evolution of Fractured Carbonate-bearing Rocks*”, Invited oral presentation given at 247th ACS National Meeting, Division of Geochemistry, Dallas, TX March 16, **2014**.
28. C.A. Peters, Fitts, J.P. “*Caprock Fracture Dissolution and CO₂ Leakage*” presented at Mineralogical Society of America (MSA) Short Course in conjunction with the American Geophysical Union’s 46th Annual Fall Meeting. Co-conveners: DJ DePaolo, DR Cole, A Navrotsky, Berkeley, CA December 7, **2013**.
29. C.A. Peters, H. Deng, J.P. Fitts “*New Reactive Transport Challenges for Acidified Flows in Fractured Carbonate Rocks*” **INVITED** Abstract H35C-1425 presented at 2013 Fall Meeting, AGU, San Francisco, CA Dec **2013**.
30. B. Guo; J.P. Fitts; M.E. Dobossy; C.A. Peters “*Simulation of permeability evolution of leakage pathway in carbonate-rich caprocks in carbon sequestration*” Abstract H53C-1431 presented at 2013 Fall Meeting, AGU, San Francisco, CA Dec **2013**.
31. J.P. Fitts, H. Deng, R. Tappero, C.A. Peters. “*Spatial Variation of Dissolution at Fracture Boundaries*” Goldschmidt **2013**. *Mineralogical Magazine*, 77(5) 1092. DOI:10.1180/minmag.2013.077.5.6
32. Chappaz, A.; Fitts, J.P.; Dahl, T. “*Molybdenum Speciation and Distribution in Ancient Euxinic Shales by μ XRF and μ XANES Spectroscopy*” Goldschmidt **2013** *Mineralogical Magazine*, 77(5) 857. DOI:10.1180/minmag.2013.077.5.6.

33. J.P. Fitts, H. Deng, R. Tappero, C. A. Peters. "Exploring Geochemically Driven Evolution of Vertical Fractures in Tight Sedimentary Rocks" 2013 AEESP 50th Anniversary Conference, Environmental Engineers and Scientists of 2050: Education, Research, and Practice. Colorado School of Mines, July **2013**.
34. H. Deng, C.A. Peters, J. Fitts, D. Crandall, G. Bromhal, L. Li "Impacts of Reactive Fluids on Fracture Flows in the Context of Subsurface Energy Technologies". 2013 AEESP 50th Anniversary Conference, Environmental Engineers and Scientists of 2050: Education, Research, and Practice. Colorado School of Mines, July **2013**.
35. A.F. Clarens, J. P. Fitts, S. Wang, Z. Tao, C.A. Peters, H. Deng. "Geochemically Driven Evolution of Mineral Surfaces: Impacts on Leakage Processes from Geologic Carbon Sequestration Sites" 2013 AEESP 50th Anniversary Conference, Environmental Engineers and Scientists of 2050. Colorado School of Mines, July **2013**.
36. H. Deng, J. Fitts, R. Tappero, C. Peters, S. Wirick, W. Rao. "X-ray imaging studies of water-rock interactions at fracture surfaces during fluid flow", 2013 National Synchrotron Light Source/Center for Functional Nanomaterials (NSLS/CFN) Joint Users' Meeting, Brookhaven National Lab, Upton, NY, May 20-22, **2013**.
37. J. Bielicki, J.P. Fitts, C.A. Peters, E. Wilson. "Monetizing Leakage Risk of Geologic CO₂ Storage using Wellbore Permeability Frequency Distributions". Geophysical Research Abstracts, Vol. 15, EGU2013-10924, 2013. EGU General Assembly **2013**.
38. BR Ellis, JP Fitts, CA Peters "Mineral Spatial Heterogeneity Constrains Permeability Evolution in a Limestone Fracture" Abstract H11A-1139 presented at Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec **2012**.
39. B Guo, JP Fitts, M Dobossy, JM Bielicki, CA Peters, "Accounting for geochemical alterations of caprock fracture permeability in basin-scale models of leakage from geologic CO₂ reservoirs", Abstract H23A-1344, presented at AGU, San Francisco, Calif., 3-7 Dec. **2012**.
40. AF Clarens; S Wang; B Liang; CA Peters; JP Fitts; H Deng; BR Ellis, "An integrated experimental program to understanding leakage from geologic carbon sequestration sites across scales", Abstract H14D-05 presented at AGU, San Francisco, Calif., 3-7 Dec. **2012**.
41. Fitts, J.P.; BR Ellis; H Deng; R Tappero; CA Peters "Calcite dissolution and caprock fracture surface deterioration at high P/T: dependence on reactive fluid velocity and mineral spatial heterogeneity" NSF CMMI Engineering Research and Innovation Conference, Program Area: Geomechanics and Geomaterials, C133, Boston, MA July **2012**. (Poster)
42. Pollak, M.F., Bielicki, J.M., Dammel J.A., Fitts J.P., Peters C.A., Wilson, E.W. (2012). Estimating Financial Consequences of Leakage from Geologic Sequestration. *11th Annual Conference on Carbon Capture Utilization & Sequestration*, April 30 - May 3, **2012**, Pittsburgh, PA. Oral Presentation.
43. Fitts, J.P.; BR Ellis; H Deng; R Tappero; CA Peters "Geochemical controls on fracture evolution in carbon sequestration" American Rock Mechanics Association Annual Meeting (ARMA), Chicago, IL, June 25, **2012**. Oral Presentation & Conference Proceeding

44. Bielicki, J., Pollak, M., Wilson, E., Fitts J., Peters C.A., (2012). "Your View or Mine: Spatially Quantifying CO₂ Storage Risk from Various Stakeholder Perspectives." *11th Annual Conference on Carbon Capture Utilization & Sequestration*, April 30 - May 3, **2012**, Pittsburgh, PA. Poster Presentation.
45. Deng H., D. Crandall, S. King, B.R. Ellis, G. Bromhal, J.P. Fitts, C.A. Peters "Change in fracture permeability after the flow-through of CO₂-acidified brine" AGU Fall Meeting, San Francisco, CA, December **2011**. (Abstract)
46. B.R. Ellis, C.A. Peters, J.P. Fitts, M.A. Celia, J. Nogue, M. Dobossy, A. Janzen, "Alteration of Caprock Fracture Geometries During Flow of CO₂-acidified Brine: Informing Basin-scale Leakage Models From Pore-scale modeling and Core-scale Experiments" AGU Fall Meeting, San Francisco, CA, Dec. 5-9, **2011**. (Abstract)
47. B. Guo, E.N Matteo, T. Elliot, J.P. Nogue, H. Deng, J.P. Fitts, M. Pollak, J. Belicki, E. Wilson, M.A. Celia, C.A. Peters, "Semi-analytical estimation of wellbore leakage risk during CO₂ sequestration in Ottawa County, Michigan" AGU Fall Meeting, San Francisco, **2011**.
48. J.P. Nogue, C.A. Peters, J.P. Fitts, M.A. Celia, "Investigation of dissolution and precipitation of carbonate rocks using reactive transport modeling in pore networks" AGU Fall Meeting, San Francisco, CA, Dec. 5-9, **2011**. (Abstract)
49. B.R. Ellis, C.A. Peters, J.P. Fitts, G.S. Bromhal, D.L. McIntyre, R.P. Warzinski "Geochemical Alteration of Fracture Geometry During Leakage of CO₂" Goldschmidt, Prague, Czech Republic, Aug. 14-19, **2011**. (Abstract)
50. Peters C.A., Clarens A.F., Fitts J.P., Oldenburg C.M., Dobson P.F., Wang J.S.Y., Guglielmi Y., Ellis B.R., Wang S., "Safe and Effective Geologic Sequestration of CO₂: Partnerships for Multi-Scaled Experimental Studies" AEESP, USF, Jul. 10-12, **2011**. (Abstract)
51. B.R. Ellis, C.A. Peters, J.P. Fitts, G.S. Bromhal, D.L. McIntyre, R.P. Warzinski "Investigation of Caprock Fracture Evolution After CO₂-Brine Flow" 10th Ann. CCS Meeting, Pittsburg, PA, May 2-5, **2011**. (Abstract)
52. Deng H., Peters C.A., Fitts J.P., Pollak M.F., Wilson E.J., "Hydrogeological characterization of a potential CO₂ injection site in Ottawa County, Michigan" AGU Fall Meeting, San Francisco, CA, December **2010**. (Abstract)
53. Ellis B.R., Fitts J.P., Brohmal G., McIntyre D., Warzinski R., Rosenbaum E., Peters C.A. "Computed Tomography Analysis of Alterations in Fractured Caprock Resulting from CO₂-acidified Brine" GSA Annual Meeting, Denver, CO, Oct. 31-Nov. 3, **2010**. (Abstract)
54. Hennebel T., De Corte S., Van der Lelie D., Fitts J.P., Boon N., and W. Verstraete "Palladium nanoparticle formation by *Citrobacter*: Effective catalysts for diatrizoate removal", 240th ACS National Meeting, Division of Environmental Chemistry, Boston, MA, August 25, **2010**.
55. Fitts J. P., D. Chidambaram, T. Hennebel, S. Taghavi, D. van der Lelie "Structure-catalytic activity relationship of biogenic Pd nanoparticles" presented at Goldschmidt 2010 in the session "Looking into the nanoworld using x-rays", Knoxville, TN June 15, **2010**. (Organizer)

56. Ellis B.R., Hui W.C.E., Peters C.A., Fitts J.P., V. Bhatt, "Potential benefits of retrofitting power plants with combined CO₂-SO₂ emission control for co-injection in geologic carbon sequestration" 9th Annual Conference on Carbon Capture & Sequestration, Pittsburgh, PA May 10-13, **2010**. (Abstract)
57. Chappaz, A, A. Dhenain, G. Druschel, J. P. Fitts, C. Kim, and T.W. Lyons "Importance of organic matter in Mo(VI) speciation in sulfidic waters: An experimental approach" AGU Ocean Sciences Meeting, Portland, OR, Feb. 22-26, **2010**. (Abstract)
58. Chidambaram D., J. P. Fitts, T. Hennebel, Safiyh Taghavi, D. van der Lelie, "Palladium(0) Nanoparticle Formation by *Clostridium* sp. BC1 Provides an Effective Biocatalyst for Hexavalent Chromium Remediation" ACS National Meeting, Washington, D.C., August **2009**.
59. Chappaz, A, Lyons, T. W., Fitts, J. P., Myneni, S. C. B "Exploring the relationship between molybdenum and organic matter through experimental approaches and XAS and NMR characterization" peer-reviewed conference proceeding; *Goldschmidt™2009*, Davos, Switzerland June 21-26, **2009**. (Abstract)
60. Chidambaram D., J. P. Fitts, T. Hennebel, Safiyh Taghavi, D. van der Lelie, "Palladium(0) Nanoparticle Formation by *Clostridium* sp. BC1 Provides an Effective Biocatalyst for Hexavalent Chromium Remediation" peer-reviewed conference proceeding, *Proceedings of the International Conference on the Biogeochemistry of Trace Elements* in Chihuahua, Mexico, July 14 -16, **2009**. (Abstract)
61. Kumpiene J., J. P. Fitts, and M. Mench, "X-Ray Spectroscopic Analyses of As Contaminated Mining Spoils 10 Years after Chemical Stabilisation" peer-reviewed conference proceeding, *Proceedings of the International Conference on the Biogeochemistry of Trace Elements* in Chihuahua, Mexico, July 14 -16, **2009**. (Abstract)
62. Kumpiene J., J. P. Fitts, and M. Mench, "X-ray absorption spectroscopic studies of phytostabilised copper-contaminated soil" EU COST 859 Phytoremediation Knowledge from Genes to Field Trials, BIOGECO Phytoremediation Platform, Ascona, Switzerland, Sept. **2009**.

Invited Presentations at Colloquia and Workshops

- "Targeted Control of Permeability Using Carbonate Dissolution/Precipitation Reactions" AGU National Meeting, substituted for A. Clarens, Dec **2016**.
- "Targeted Mineral Carbonation to Enhance Wellbore Integrity" (Princeton-University of Virginia collaborative project) at FOA 1037 Kickoff Meeting, NETL Pittsburg, PA Dec. 3, **2015**.
- "Contaminant mobilization from shale during hydrofracking and gas production" Invited presentation at the 250th ACS National Meeting, Division of Geochemistry, Boston, MA. August 19, **2015**.
- "Geophysical and Mineralogical Controls on the Rheology of Fracture Slip and Seal Breaching" co-presented with Derek Elsworth (Penn State U.) at FOA 1037 Kickoff Meeting, NETL Pittsburg, PA November 12, **2014**.

- *"Pore-Scale Representation and Modeling"* discussion leader at Flow & Transport in Permeable Media Gordon Research Conference, Bates College, Lewiston, ME July 11, **2014**.
- *"Current State of CO₂ Utilization"* presented as invited panelist on Global Large-Scale Projects on CCUS and their Outlook at Columbia University's RCN CCUS Annual Meeting and Workshop, New York, NY April 14, **2014**.
- *"Mineralogical controls on contaminant levels in wastewater from shale gas operations"* Photon Sciences Directorate Seminar Series, Brookhaven National Lab's National Synchrotron Light Source II, Upton, NY March 28, **2014**.
- *"Geochemical Proxies in shale for gas production, contaminant mobility and ocean oxygenation"* Department of Earth & Environmental Sciences Seminar Series, Rutgers University, Newark, NJ March 12, **2014**.
- *"The Geochemical and Spatial Frontiers of Gas-bearing Shale"* NSLS II First-Experiments workshop, Upton, NY August 12, **2013**.
- *"Creating a Window into the Subsurface: The Potential for In Situ Imaging of Fluid-rock Interactions at SRX"* Rock & Cell Workshop on Early Science for NSLS II, Upton, NY, September 19, **2012**.
- *"Basin-Scale Leakage Risks from Geologic Carbon Sequestration: Impact on CCS Energy Market Competitiveness"* NETL Carbon Storage Program Annual Meeting, Pittsburgh, PA, August 23, **2012**.
- *"Geochemical controls on fracture evolution in carbon sequestration"* American Rock Mechanics Association Annual Meeting (ARMA), Chicago, IL, June 25, **2012**.
- *"Putting Interfacial Chemistry to Work for Civil & Environmental Engineering"* Princeton University, Civil & Environmental Engineering Department, Princeton, NJ, April 19, **2011**.
- *"Statistical Challenges Facing Pore-Scale X-ray Imaging Results"* presented at the workshop on "Supercritical CO₂-Material Interactions" BNL, Upton, NY, March 23, **2011**.
- *"Evaluating Geologic CO₂ Storage: How will geochemistry impact reservoir performance?"* Stony Brook University Department of Geosciences Colloquium & Graduate Seminar, October 28, **2010**.
- *"Unlocking the many faces of nanoparticle structure"* presented to The Laboratory of Microbial Ecology and Technology (LabMET), Faculty of Bioscience Engineering at Ghent University, Belgium, September 14, **2010**.
- *"Supporting remediation strategy design and implementation with synchrotron-based x-ray characterization tools"* presented at Northern Sweden Soil Remediation Center Spring Workshop, Lövånger, Sweden May 11, **2010**.
- *"Basin-Scale Leakage Risks from Geologic Carbon Sequestration: Impact on CCS Energy Market Competitiveness"* presented at DOE/EPA Collaborative Review – Tracking Geologically-Sequestered CO₂: Monitoring, Verification, & Accounting (MVA), Simulation, and Risk Assessment, Pittsburgh, PA March 23, **2010**.

- *"Applying biogeochemical concepts to ensure that today's solutions don't become tomorrow's problems: Geologic CO₂ storage"* School of Earth and Environmental Sciences Colloquium, Queens College November 23, **2009**.
- *"Synchrotron X-ray Microprobe: A Tool for Nuclear Forensics"* Jeffrey Fitts, Michael Rosenthal, Barry Siskind, P. Northrup, meeting of U.S. NWAL laboratories, Washington, DC October 29, **2008**.
- *"One Environmental Science User's Perspective on Scanning Transmission X-ray Microscopy"* Canadian Light Source Earth & Environmental Science Workshop, Saskatoon, Saskatchewan, Canada May 5, **2008**.
- *"Center for Geologic Carbon Storage Science (CGCSS)"* Presentation to EENS visiting committee during review of the Environmental Sciences Department, July 23, **2008**.
- *"Advancing experimentally-based models of mineral-water interfaces"* Invited presentation at Geological Society of America Annual Meeting special session in honor of Prof. Gordon E. Brown Jr. Oct. **2007**.
- *"EXAFS and SHG studies of mineral-water interfaces: applications and limitations"* Presented at 'Surface Reactions & Electrical Interfacial Layer: Experiments and Models - Towards a Common Basis' sponsored by European Union ACTINET Opatija, Croatia October 9, **2007**.
- *"Synchrotron-based investigations of biogeochemical transformations of priority contaminants in soils at DOE sites"* Nuclear Summer School at BNL presented July 17, **2007**.
- *"Biotransformations of engineered nanoparticles in the environment"* Presented at CEMS Fall meeting Stony Brook University November 2, **2006**.
- *"Synchrotron-based investigations of biogeochemical transformations of priority contaminants in soils at DOE sites"* Nuclear Summer School at BNL presented July 18, **2006**.
- *"Composition Of Microbial Communities Used For In Situ Radionuclide Immobilization: Natural Gene Transfer To Develop Resistance To Metal Toxicity"* invited oral presentation at the ERSP PI meeting in Warrenton, VA April 3, **2006**.
- *"Zeroing in on structure-reactivity relationships at aqueous/metal oxide mineral interfaces"* Oak Ridge National Lab Chemical Sciences Division presented October 24, **2005**.
- *"Charging behavior at water/single crystal oxide interfaces determined by optical second harmonic generation spectroscopy"* invited oral presentation in the symposium "Applications of Physical Chemistry to Environmental and Biogeochemical Research" at the 229th ACS National Meeting in San Diego, CA, March 13-17, **2005**.
- *"Illuminating Mineral-Water Interfaces"* Geosciences Department Colloquium at Stony Brook University presented December 9, **2004**.
- *"EnviroSuite: Using State-Of-The-Art Synchrotron Techniques to Understand Environmental Remediation Science Issues at the Molecular Level"* Waste Management 2004 Conference Proceeding published online at www.wastemanagement.com, Tucson, AZ, **2004**.

- "Real-world contaminant behavior explored through studies of model systems" CEMS annual meeting, presented at Stony Brook University on May 14, **2004**.

Service and Outreach

- NSLS II Users Executive Committee, Vice-Chair, Elected May 2016-2018.
- Proposal Review Panel Member, Stanford Synchrotron Radiation Lab, SLAC (2016-present).
- Proposal Review Panel Member, Advanced Light Source, LBNL (2006-present).
- Board member and officer, 299 W 12TH ST Condominium Association (2012-present).
- Co-chair, 2017 NSLS2 and CFN User's Meeting, Brookhaven National Lab, May 15-17, 2017.
- Lead convener, "Fluid-Rock Interactions Controlling Structure, Flow, and Transport in the Subsurface, I-IV", AGU Annual Meeting, Dec 2016.
- Board member and officer, Abingdon Square Conservancy (2012-2016).
- Proposal Review Panel Member, National Synchrotron Light Source, BNL (2005-2014).
- Organizing Committee Member, Oak Ridge National Lab's Natural Gas R&D Workshop, Feb. 2014.
- Steering Committee Member, Columbia University's Research Coordination Network (RCN) on Carbon Capture, Utilization and Storage (2012-2015).
- Beamline Advisory Team Member, SRX Beamline, National Synchrotron Light Source II (2010-2012).
- Member: Geochemical Society of America; American Geophysical Union; American Chemical Society; Association of Environmental Engineering and Science Professors.
- Guest Editor: Chemical Geology.
- Reviewer: Environmental Science & Technology, Water Resources Research, Advances in Water Research, International Journal of Greenhouse Gas Control, Nature Nanotechnology, Langmuir, Chemical Geology, Geochimica et Cosmochimica Acta, ACS Sustainable Chemistry & Engineering, Journal of Colloid & Interface Science, Journal of Physical Chemistry, Biotechnology and Bioengineering, Bioresource Technology, Waste Management, ACS Applied Materials & Interfaces, Advances in Water Resources, Materials Chemistry and Physics.