# CURRICULUM VITAE


## CATHERINE A. PETERS

*The George J. Magee Professor of Geoscience and Geological Engineering*

Department of Civil and Environmental Engineering
Princeton University
Princeton, New Jersey 08544, U.S.A.

TEL: 1-(609) 258-2505
cap@princeton.edu
http://peters.princeton.edu/


## EDUCATION:

PhD Joint degree: Civil Engineering, Engineering & Public Policy, Carnegie Mellon University, Pittsburgh, Pennsylvania, 1992.
MS Civil Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania. 1987.
BSE Chemical Engineering, University of Michigan, Ann Arbor, Michigan, 1985.

## PROFESSIONAL EXPERIENCE:

2011-pr *Full Professor*, Dept. of Civil and Environmental Engineering, Princeton University.
*Faculty Affiliation*: Department of Geosciences, Andlinger Center for Energy and the Environment, Princeton Materials Institute, High Meadows Environmental Institute
*Executive Committee*, Program in Sustainable Energy
2013-25 *Director*, Program in Geological Engineering.
2023-24 *Guest Professor*, Technical University Delft, The Netherlands. Faculty of Civil Engineering & Geosciences, Dept. of Geoscience and Engineering, Host: Prof. Hadi Hajibeygi.
2017-23 *Department Chair*, Dept. of Civil and Environmental Engineering, Princeton University.
2014-15 *Acting Chair*, Princeton University, Dept. of Civil and Environmental Engineering
2009 *Visiting Professor*: Earth & Environ. Systems Inst., Penn State Univ. Host: Susan Brantley
2004-08 *Associate Dean*, Academic Affairs, Princeton Univ. School of Engineering & Applied Science
2000-11 *Associate Professor*, Princeton University, Dept. of Civil and Environmental Engineering
1994-00 *Assistant Professor*, Princeton University, Dept. of Civil Engineering & Operations Research
1992-94 *Postdoctoral Research Associate,* University of Michigan, Environmental and Water Resources Eng., Ann Arbor, MI. Research group: Prof. Walter J. Weber, Jr.
1985-92 Carnegie Mellon University, Pittsburgh, PA.
*Research Assistant* for Prof. Richard G. Luthy, Dept. of Civil Engineering
*Research Assistant* for Prof. Mitchell J. Small, Dept. of Engineering and Public Policy.
1986 Brookhaven National Laboratory, Upton, NY. *Research Assistant.*
1982-85 Dow Chemical Co., Midland, MI. Internship: Cooperative Education Program.
1983-85 Univ. of Michigan, Ann Arbor, MI. *Laboratory Assistant*, UofM Research Hospital.
*Undergraduate Research Assistant* for Prof. H. Scott Fogler, Dept. of Chem. Eng.

## PROFESSIONAL MEMBERSHIPS:

Association Environmental Engineering & Science Professors AEESP (*President, 2002-2003*)
American Academy of Environmental Engineering and Science (AAEES)
American Chemical Society (ACS)
American Geophysical Union (AGU)
American Society of Civil Engineers (ASCE)
Alpha Chi Sigma, Professional Chemistry Fraternity

## AWARDS, HONORS AND DISTINCTIONS:

2026-27 AEESP Distinguished Lecturer
2025 *Fellow*, American Geophysical Union (AGU)
2024 AEESP Award for Outstanding Contributions to Environmental Engineering & Science.
2025 AEESP award for distinguished service as Editor-in-Chief of *Environmental Engineering Science*
2021 The George J. Magee Professorship of Geosciences and Geological Engineering at Princeton University, Appointed September 2021.
2023 Paul F. Boulos Excellence in Computational Hydraulics/Hydrology Award with Tom Postma, conferred by the American Academy of Environmental Engineers and Scientists (AAEES).
Princeton Commendation List for Outstanding Teaching. 2016, 2018, 2023.
2021 *Applied Geochemistry Editor's Choice Award* for "Quantification of Mineral Reactivity Using Machine Learning …" doi.org/10.1016/j.apgeochem.2021.105162
2020 Distinguished Alumnus Award of Carnegie Mellon University CEE.
2020 AAEES Honorary Board Certification by Eminence (BCEE).
2016 *Fellow* of the Association of Environmental Engineering and Science Professors (AEESP).
2012 EPA P3 Award for Sustainable Design Project, Power-in-a-Box™.
*2011 Chemical Geology* Most Cited Article 2005 to 2010 for "Forsterite dissolution and magnesite precipitation … ".
AEESP Award for Service as President of AEESP (2002-2003) and for service on the AEESP Board of Directors (2000-2004).
Educator of the Year 2000. Presented by the New Jersey Section ASCE to an outstanding educator who has contributed substantially to the field of civil engineering.
Princeton University Research Board Award, 1997-98. Conferred in recognition of significant promise in establishment of a research program.
Alfred Rheinstein '11 Junior Faculty Award, Princeton University, 1996. Conferred in recognition of exceptional promise in teaching and scholarship.
Alcoa Foundation Research Award, 1996. For novel research on synthetic NAPLs.
Princeton University Research Board Award, 1995-96. Conferred in recognition of significant promise in establishment of a research program.
Graduate: Patricia Harris Scholarship, U.S. Department of Education, 1989-92. Wharton Foundation Fellowship, 1986-87.
Undergraduate: BSE degree granted *Cum Laude*, 1985. Tau Beta Pi, National Engineering Honor Society, 1984. Phi Lambda Upsilon, National Chemistry Honor Society, 1984.

## PROFESSIONAL APPOINTMENTS and STANDING COMMITTEES:

NSLS-II Synchrotron, Beamline Advisory Team for Tender X-ray Nanoprobe (TXN). Since Jan 2024.
Science Advisory Committee, DOE Earthshot EERC "Center for Understanding Subsurface Signals and Permeability" (CUSSP) at PNNL, since 2023.
AEESP Fellows Steering Committee, 2017-20, 2023-26.
Editor-in-Chief, *Environmental Engineering Science*, Mary Ann Liebert, Inc. Publishers. 2019-2025.
Advisory Board, *Greenhouse Gases: Science and Technology*, Wiley Journals. Since 2011.
Deputy Editor, *Environmental Engineering Science*, Mary Ann Liebert, Inc. Publishers. 2014-19.
Advisory Committee, DOE EFRC Center on "Nanoscale Controls on Geologic $CO_2$" (NCGC) at Lawrence Berkeley National Laboratory. 2014-2019.
Member of Stakeholders Group, U.S. DOE National Risk Assessment Partnership (NRAP), 2016-2018.
Rutgers University, External Advisory Board (EAB) Bioenvironmental Engineering Program. 2015-18.
Associate Editor, *Environmental Engineering Science*, Mary Ann Liebert, Inc. Publishers. 2011-2014.
Member, U.S. Environmental Protection Agency (EPA) Science Advisory Board. 2007-2013.
President, *Association of Environmental Engineering and Science Professors* (AEESP). 2002-03.
Vice President, *Association of Environmental Engineering and Science Professors* (AEESP). 2001-02.
Board of Directors, *Assoc. of Environmental Engineering and Science Professors* (AEESP). 2000-2005.

Nominating Committee, AEESP Board of Directors, 2003-08 (*Chair*, 2003-04)
Science Advisory Committee, EPA Great Plains/Rocky Mountain Haz. Substance Res. Ctr. 1996-02.
National Research Council Committee on Drinking Water Contaminants, 1998-2001.
AGU Hydrology Section: Groundwater Technical Committee. 1998-2000.
Electronic Communication and Education Committee of the Association of Environmental Engineering and Science Professors (AEESP). 1996 - 2000.

## PROFESSIONAL ACTIVITIES AND INVITED PANELS:

Convener and Presider, "Natural Hydrogen ($H_2$) Unlocking its Potential for Generation and Recovery" AGU Annual Meeting, New Orleans, December 2025.
Panelist and session chair: "Will bio-geochemistry impose any 'showstopper' risks?", 4th Intl. Summer School Underground H2 Storage, DTU, Technical University of Denmark. Jul 2025.
Panelist and session chair: 'Risks/benefits related to microbiology and geochemistry of underground $H_2$ storage', 3rd Intl. Summer School Underground $H_2$ Storage, Edinburgh, Scotland Jul 2024.
Convener and Presider, Minisymposium 'Flow, transport and mechanics in fractured porous media' InterPore2024 16th Annual Meeting, Qingdao, China. May 2024.
Convener and Presider, Workshop on "Climate Change in Environmental Engineering Education" AEESP Research and Education Conference, June 2022.
Panelist, "Meet the Editors" Workshop at AEESP Research & Education Conference, June 2022, 2023.
Delegate, Environmental Geochemistry Field Trip to GangCha Qinghai Lake (western China), Hosted by Xiaofan Yang, Beijing Normal University, August 2019.
ISEG Special Editor Session Panelist, ISEG 2019 11th International Symposium on Environmental Geochemistry, Peking University (PKU), Beijing, China, August, 2019.
Earth and Environmental Sciences Area Expert Assessment Committee at the Lawrence Berkeley National Laboratory, February 2017.
Panelist DOE Basic Energy Sciences (BES) Basic Research Needs (BRN) for the Energy-Water Nexus: New Approaches to Ensure Robust and Secure Energy and Water Systems, January 2017.
Theme Chair, sessions on "Energy Resources for Society" for Goldschmidt Conference 2017 Paris.
Onsite reviewer, Oak Ridge National Lab (ORNL) BES Geosciences Program, November 2015.
Editor (with Andres Clarens) of the special issue of *Environmental Engineering Science*, "The science and innovation of emerging subsurface energy technologies", 2015-2016.
Convener and Presider, Symposium "Subsurface Geochemistry for Energy & the Environment", 250th ACS National Meeting, GEOC Division, Boston, MA. August 2015
Convener and Presider, Workshop on "Engineering Strategies for a Sustainable Food Supply Chain", Princeton University, March 2015.
Roundtable participant and contributing author: 'Controlling Subsurface Fractures and Fluid Flow: A Basic Research Agenda' DOE Roundtable report, Foundational Research Relevant to SubTER, DOE Germantown May 2015.
Convener, Gordon Research Conference on Flow & Transport in Permeable Media, 6th to 11th July 2014, Bates College, Maryland.
Review Committee Member, Earth Sciences Division (ESD) at Lawrence Berkeley National Laboratory (LBNL). 2013.
Rice University Department of Civil and Environmental Engineering, Advancement Committee, 2013.
Organizing Committee and Session Leader, Gordon Research Conference Flow & Transport in Permeable Media, Les Diablerets, Switerzerland. June 2012.
Session convener and chair, "GC42A Carbon Sequestration: Upscaling Issues Related to Predicting Carbon Dioxide Leakage Potential from Geologic Repositories" AGU Fall Meeting, Dec 2011.
Organizer, NSF SEES Workshop Natural and Engineered Carbon Sequestration, Minneapolis, MN, October 2011.
Technical Committee, AEESP Education & Research Conference, Univ of S. FL, July 2011.
Panelist for the 2011 PNNL Science Focus Area (SFA) Review.

Workshop organizer and panel chair, U.S. DOE Workshop on *Common Research Themes for Carbon Storage and Enhanced Geothermal Energy*. June 2010. Rockville, MD.
Session organizer and presider, "Science and Engineering Challenges in Carbon Capture and Storage (CCS)", at the AEESP 2009 Conference on Grand Challenges in Environmental Engineering and Science. University of Iowa, July 2009.
Steering Committee, 2009 Symposium on Engineering & Liberal Education. June 2009 Union College.
Task Force, Creation of a Society for Environmental Engineering, AEESP and AAEE. 2002-2005.
NETL Merit Review Board (DOE's National Energy Technology Laboratory), Pittsburgh, PA. 2004-pr.
Advisory Committee, Rutgers University, Center for Self-Sustaining High-Rise Buildings, 2004-pr.
Session Chair for "Understanding Complex Environmental Systems" at the 2002 AEESP/AAEE Conference: Integrating Environmental Teaching, Research and Practice, Toronto, Canada.
Association of Environmental Engineering and Science Professors (AEESP) Conference on Research Frontiers, Penn. State University, August 1999; Member of organizing committee.
Convener and chair (with C. Zheng) of special session on "Environmental Hydrogeology", AGU Fall Meeting, San Francisco, CA, Dec. 1999.
Convener and chair of special session on "Multicomponent Contaminants in Surface and Subsurface Systems", AGU Fall Meeting, San Francisco, CA, Dec. 1997.

## PRINCETON UNIVERSITY SERVICE:

Director of the Program in Geological Engineering, 2013 – 2025.
Chair of the CEE department, 2017-2023.
Elected Member, C/3 Faculty Advisory Committee on Appointments and Advancements, 2019-20.
High Meadows Environmental Institute (formerly PEI) Advisory Committee, 2019-2022.
PECS (Princeton Energy & Climate Scholars) Faculty Board
Task Force on the Administrative Workload on Research, Dean for Research, 2017-18.
Committee on Public Lectures, 2015 – 2017.
CEE Departmental Representative for Undergraduate Academic Affairs. 2011-2015.
Princeton Environmental Institute (PEI) Interdepartmental Committee for the Program in Environmental Studies. July 1998 to 2012.
Executive Committee Member, Keller Center for Innovation in Engineering Education. 2008 to 2020.
Faculty leader for award-winning student project "Power in a Box™", http://powerbox.princeton.edu, 2010-2014.
Executive Committee Member, Program in Sustainable Energy, 2008-2016.
Executive Committee Member, Program Environmental Engineering & Water Resources. 1995 to 2016.
CEE Departmental Committee for ABET Accreditation. 1999-2017.
Executive Committee Member, Program in Architecture and Engineering, 2012-2015.
Member, SEAS Curriculum Committee 2008 to 2015.
Member, Program in Urban Studies, 2007 to 2013.
Director, Program in Environmental Engineering and Water Resources, 2009 to 2011.
Acting Director, Energy Grand Challenges Research Initiatives, Princeton University, 2009-2010.
Chair, SEAS Curriculum Committee, 2005 to 2008.
Chair of Search Committee for SEAS Director of Engineering and the Life Sciences, 2005-06.
Co-Chair of Search Committee for SEAS Associate Dean for Graduate Affairs, Summer 2004.
Chair, Executive Committee for the SEAS Workshop on Energy and the Environment, Fall 2003.
Executive Committee Member for the SEAS Workshop on Engineering, Policy and Society. Fall 2003.
President's Task Force on the Status of Women in Natural Sciences and Engineering. 2001-03.
University Committee on the Course of Study. Term: 2002-05.
CEE Departmental Representative for Undergraduate Academic Affairs. 1999-2001
SEAS Strategic Alliance Committee on Environmental Engineering. 1997-1998.
University Committee on Undergraduate Life, Princeton University, 1995-1999.
Princeton Environmental Institute (PEI) Curriculum Committee. 1997 to 1998.
Faculty Representative, Graduate Women in Science and Engineering (GWISE) 1995-1997.

## EDUCATIONAL GRANTS and EDUCATIONAL AWARDS:

Award from Princeton 250th Fund for Innovation in Undergraduate Education, "CEE curricular elements: The transition to online teaching and learning" with CEE faculty, July 2020

Award from the Princeton Humanities Council for a Gardner magic grant for Power-in-a-Box™ project and collaboration with Anthropology Professor Carolyn Rouse.

Award from the Siebel Energy Challenge fund at Princeton University for summer internships for "Wind-Solar Power for High School in Oshiyie, Ghana". Summer 2012.

Award from the U.S. EPA for "Power in a Box™: Shipping Sustainable Energy to Recovering and Off-the-Grid Communities" for winning the EPA P3 student design competition, 2012.

Award from the U.S. EPA for "Wind Energy for Haiti", for EPICS team to compete in the P3: People, Prosperity and Planet Student Design Competition 2012.

Award from the Siebel Energy Grand Challenge fund, Princeton Univ., "Carbon Capture and Geologic Sequestration: Linking Undergraduate Education with Cutting Edge Research". 2010-13.

Award from Princeton Institute for International and Regional Studies (PIIRS), with Elie Bou-Zeid and Jane Harrison, "EPICS: Wind Energy and Rainwater Harvesting Solutions for Sustainable Recovery of Haiti", 2010-2013.

Award from the 250th Anniversary Fund for Innovation in Undergraduate Education, Princeton University, "EPICS: Engineering Projects in Community Service 2007-2009.

Award from the U.S. EPA for "An Innovative Paradigm: Green Retrofitting Residential Buildings", an opportunity for my EPICS student team to compete in the P3: People, Prosperity and the Planet Student Design Competition for Sustainability. 2008.

Award from the High Meadows Fund, managed by the Princeton Sustainability Committee, for innovations in engineering education related to sustainability, EPICS Greentrofit Project.

Graduate Curriculum Development Award, Princeton University, May 2000. Conferred for "Molecular Modeling in Environmental Chemistry".

## COURSES TAUGHT:

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|---|---|
| CEE 304 | Energy and Environmental Engineering |
| CEE 303 | Introduction to Environmental Engineering |
| EGR 250/350/450 | EPICS: Engineering Projects in Community Service |
| CEE 367 | Environmental Risk Assessment and Management |
| CIV 406 | Statistics for Experimental Design and Data Analysis |
| CEE 477 | Engineering Design for Sustainable Development |
| CEE 501 | Environmental Engineering Fundamentals I |
| CEE 502 | Environmental Engineering Fundamentals II |
| CEE 505 | Statistical Methods for Data Analysis, Modeling and Experimental Design |
| CEE 571 | Environmental Chemistry |
| CEE 599 | Special Topics: Carbon Capture and Geologic Sequestration |
| CEE 599 | Special Topics: Modeling Geochemical Kinetics and Reactive Transport |
| CEE 599 | Special Topics: Modeling Environmental Geochemistry |
| ENV 201 | Environmental Studies |

## INVITED LECTURES, SEMINARS, MASTERCLASSES:
## @ Universities, National Labs, Workshops, and Short Courses:

1. "Advancing Subsurface Strategies for Decarbonization and Energy Sustainability" AEESP Distinguished Lectureship 2026-27.

   Oct 7, 2026. The Ohio State University, Department of Civil, Environmental and Geodetic Engineering.

   Oct 12, 2026. Michigan Technological University, Department of Civil, Environmental, and Geospatial Engineering.

   Oct 22, 2026. University of Texas - Austin, Fariborz Maseeh Dept of Civil, Architectural and Environmental Engineering.

Nov 19, 2026. University of Virginia, Dept of Civil and Environmental Engineering.

2. "Underground $H_2$ Generation and Storage: An Accelerated Pathway to Energy Decarbonization" AEESP Distinguished Lectureship 2026-27.
   Nov 20. 2026. Virgina Tech, The Charles Edward Via, Jr., Department of Civil & Environmental Engineering.
3. "$H_2$ in our world", Masterclass in Ohio State's graduate program 'Sustainable Energy and Environmental Systems', Host: Prof. Jeffrey Bielicki. October 2026.
4. "Subsurface Strategies for $H_2$: Underground Storage and Geologic Generation", School of Earth Sciences, The Ohio State University. Host: Prof. David Cole, October 2026.
5. "Geologic $H_2$ Generation: An Accelerated Pathway to Energy Decarbonization" Symposium on Underground Hydrogen Storage, TU Delft, The Netherlands, Host: Hadi Hajibeygi. February 2026.
6. "Geologic $H_2$ Generation: An Accelerated Pathway to Energy Decarbonization" Graduate seminar in the Craft and Hawkins Department of Petroleum Engineering, Louisiana State University. Feb 2026
7. "Geologic $H_2$ Generation: An Accelerated Pathway to Energy Decarbonization" 4th Intl. Summer School on Underground Hydrogen Storage, DTU, Technical University of Denmark. Jul 2025.
8. "Permeability reduction and fracture sealing: Multiple carbonate reactions lead to the same outcome" GMCS Seminar Series, University of Minnesota, Center on Geo-processes in Mineral Carbon Storage. Host: Emmanuel Detournay. December 2024.
9. "Underground $H_2$ Storage and Natural Production: Pathways to Energy Decarbonization", Distinguished Visitor Seminar Series, University of Minnesota Department of Earth & Environmental Sciences. Host: Peter Kang. October, 2024.
10. "Underground $H_2$ Storage: Masterclass on Geochemistry vs $H_2$" 3rd Intl. Summer School Underground Hydrogen Storage, University of Edinburgh, Scotland. Jul 2024.
11. "Underground $H_2$ Storage and Natural Production: Pathways to Energy Decarbonization", Distinguished Lecture Series, School of Civil and Environmental Engineering and Earth Sciences, Clemson University. Host: Jesus M. de la Garza. March 2024.
12. "Underground $H_2$ Storage and Natural Production: Pathways to Energy Decarbonization", HMEI Faculty Seminar. Host: Gabe Vecchi. March 2024.
13. "Geochemistry of Carbon Capture and Sequestration" Subsurface Storage Course, TU Delft, Dept. of Geoscience and Engineering, Host: Hadi Hajibeygi. November 2023.
14. "Carbonate Geochemistry, Carbon Mineralization and Reaction Kinetics" DARSim Lecture, TU Delft, Dept. of Geoscience and Engineering, Host: Hadi Hajibeygi. October 2023.
15. "Carbonate Geochemistry and Coupled Hydrologic Processes", Invited speaker, DTU Summer School on Offshore CCS, Danish Technical University, August 2023.
16. "Carbon Mineralization and Reaction Kinetics", Invited speaker, DTU Summer School on CCS, DTU, Copenhagen, August 2023.
17. "Underground $H_2$ Storage: Geochemistry Considerations", Invited speaker, 2nd International Summer School on UHS, Technical University of Delft, The Netherlands. July 2023.
18. "Underground $H_2$ Storage: Geochemistry" Invited speaker, 1st International Summer School on UHS, TU Delft, The Netherlands. July 2022.
19. "Underground $H_2$ Storage: Geochemical Considerations" Invited speaker, Collaborative Opportunities in Hydrogen Research, Development, Demonstration, and Deployment (RDD&D), ACEE Princeton University, April 2022
20. "Offsetting greenhouse gas emissions with carbon mineralization, utilization and sequestration" Delft Univ. Technology, GeoScience and GeoEnergy Webinar, April 2022 (Host: Hadi Hajibeygi)
21. "Decarbonization: Carbon capture, mineralization, utilization and sequestration" EEE Research Seminar, Purdue University, Environmental and Ecological Engineering. February 2022.

22. "Offsetting greenhouse gas emissions with carbon capture, mineralization, utilization and sequestration" 2021 National Academy of Engineering Annual Meeting. NAE Forum on Engineering Responses to Climate Change. October 2021.
23. "Looking underground for a climate solution" 2021 National Academy of Engineering Annual Meeting Section 4 Symposium NAE 'Feeling the effects of too much carbon? Civil and environmental engineering actions.' October 2021.
24. "Multimodal X-ray spectroscopy and a synchrotron-based *In Operando* microfluidic experiment to study mineral reactions on fracture surfaces" Synchrotrons and Geochemistry: A Workshop for Novices and Experts. June 28-29, 2021. Hosted by GSECARS and COMPRES.
25. "Reactive transport experiments and modeling for secure fluid containment in the subsurface" Frontiers in Geosciences Seminar Series, Los Alamos National Laboratory April 2019. (Host: Qinjun Kang)
26. "Environmental Geochemistry Perspectives on Subsurface Energy Technologies" Energy Seminar, Stanford Precourt Institute for Energy, Stanford University, April 2018. (Host: Sally Benson)
27. "Permeability evolution in fractured carbonates exposed to reactive flow" the Claude R. Hocott Lecture in Petroleum Engineering, at the University of Texas at Austin's Hildebrand Department of Petroleum and Geosystems Engineering. February 2018. (Host: Masa Prodanovic)
28. "Synchrotron Techniques in Support of Sustainable Subsurface Energy Technologies" 2017 NSLS-II and CFN Users' Meeting: Synchrotron Techniques in Support of DOE's Subsurface R&D Effort, Brookhaven National Lab, Brookhaven, NY May 2017.
29. "Environmental Geochemistry Perspectives on Subsurface Energy Technologies" Engineering Sustainability 2017: Innovation and the Triple Bottom Line. Pittsburgh, PA, April 2017.
30. "Permeability evolution in fractured carbonates exposed to reactive flow", University of Calgary, Department of Geosciences, Alberta Canada. March 2017. (Host: Steve Bryant)
31. "Permeability evolution in fractures exposed to reactive flow", Imperial College London, Department of Earth Science & Engineering, Petroleum Geoscience & Engineering. March 2016. (Host: Branko Bijeljic)
32. "Geochemical reactions and permeability evolution in caprock fractures", University College London, Department of Earth Sciences, March 2016. (Host: Eric Oelkers)
33. "Geological Carbon Sequestration: Geochemical Processes and Storage Reliability", University of Delaware, Civil & Environmental Engineering, November 2015. (Host: Dominic Di Toro)
34. "Geochemical reactions and permeability evolution in caprock fractures", Temple University, Earth & Environmental Science, Sept 2015. (Host: Nicholas Davatzes)
35. "$CO_2$ Storage Permanence in Geologic Carbon Sequestration" Workshop on Clean Utilization of Coal; 5$^{th}$ International Symposium of the McConnell International Scholars Academy. St. Louis, MO, October 2014.
36. "Geochemistry of Caprock Fracture Dissolution and CO2 Leakage in Geologic Carbon Sequestration" Gordon Research Conference on Environmental Sciences Water. Holderness, NH, June 2014.
37. "Modifications to cost curves of geologic CO2 storage caused by reservoir leakage and the policy implications" Workshop for the Research Coordination Network on Carbon Capture Utilization and Storage, Columbia University. CCUS RCN April 2014.
38. "Geochemistry of Caprock Fracture Dissolution and CO2 Leakage in Geologic Carbon Sequestration", Washington University, Department of Energy Environmental and Chemical Engineering, 2014.
39. "Caprock Fracture Dissolution and $CO_2$ Leakage", MSA Short Course on Geochemistry of Geologic $CO_2$ Sequestration, Lawrence Berkeley National Lab, December 2013.

40. "Predicting Permeability Evolution in Reactive Flow Paths in Porous and Fractured Media", U.S. DOE BES Geosciences Workshop on Reaction and Transport within Internal Domains of Porous Media, Dec 2012, San Francisco, CA.
41. "Permeability Evolution of Fractured Rock Due to Acid-Driven Reactions: Experiments and Modeling", NSF workshop on Identification of Fundamental Interfacial and Transport Phenomena for the Sustainable Deployment of Hydraulic Shale Fracturing, May 14-15, 2012, Arlington, VA.
42. "$CO_2$-acidified brines and reactions with caprock minerals", Workshop on Supercritical Carbon Dioxide and Material Interactions, Brookhaven National Laboratory, March 21-23, 2011.
43. "Wind Energy and Rainwater Harvesting Solutions for Sustainable Recovery of Haiti." NSF EERI Haiti RAPIDS and Research Needs Workshop, September 30 and October 1, 2010, NSF Headquarters, Arlington, VA.
44. "DUSEL $CO_2$: A facility for experimental study of geologic carbon sequestration", Sanford Underground Laboratory at Homestake, Lead, SD. April 20, 2010.
45. "Geologic Carbon Sequestration: Challenges of Experimental Study", Chinese Academy of Sciences, Institute for Geosciences (Host: Zhenhao Duan) Beijing, China. Nov. 6, 2009.
46. "Geologic Carbon Sequestration: Challenges of Experimental Study", Center for Energy & Environmental Policy Research (CEEP), Chinese Academy of Sciences Institute of Policy and Management and the CNPC Research Institute of Economics and Technology (Hosts: Prof. Changlu Zhao, Vice President of BIT and Prof. Wei, the center director) Beijing, China. Nov. 6, 2009.
47. "Geologic Carbon Sequestration: Challenges of Experimental Study", Tsinghua BP Clean Energy Research and Education Centre (Li Zheng, Director), Tsinghua University, Beijing, China. 2009.
48. "Geologic Carbon Sequestration: Challenges of Experimental Study", Forum on Energy, Environment & Economic Policy Research, Nov 3-4, 2009, Jiao Tong University, Shanghai, China.
49. "Reactions in geologic sequestration of $CO_2$: Fast, slow, and forget about it!", CEE Seminar Series, Penn State University, April 2009. (Host: Bruce Logan)
50. "Reactions in geologic sequestration of $CO_2$: Fast, slow, and forget about it!", CEKA 30-Slides Seminar Series, Earth and Environmental Systems Institute, *Penn State University*, March 2009. (Host: Susan Brantley)
51. "Reaction rate upscaling in geologic carbon sequestration", Dept. of Geosciences, SUNY Stony Brook, February 2009.
52. "Carbon Sequestration", *Deep Carbon Cycle Workshop*, Geophysical Laboratory of the Carnegie Institute, Sponsored by the Alfred P. Sloan Foundation, May 2008.
53. "Up-Scaling Mineral Accessibility and Pore Networks for $CO_2$ Reactive Transport in Sandstones", U.S. DOE National Energy Technology Laboratory, Morgantown, WV, March 31, 2008.
54. "Mineral Reactions in Geological $CO_2$ Sequestration: Fast, Slow, and Forget About It!", Department of Civil & Environmental Engineering, McGill University, March 22, 2007. (Host: Subhasis Ghoshal)
55. "Environmental Behavior of Complex PAH Mixtures", Brown University, Division of Engineering, April 19, 2006.
56. "Mineral Reactions in Geological $CO_2$ Sequestration: Fast, Slow, and Forget About It!", School of Engineering, University of Vermont, January 31, 2006. (Host: Domenico Grasso)
57. "Geologic Storage of $CO_2$ in Deep Saline Aquifers", Department of Chemical Engineering, Yale University. February 12, 2003. (Host: Meny Elimelech)
58. "Geologic Storage of $CO_2$ in Deep Saline Aquifers", Department of Environmental Sciences and Engineering, University of North Carolina. January 31, 2003. (Host: Mike Aitken)
59. "Geologic Storage of $CO_2$ in Deep Saline Aquifers", Department of Civil and Environmental Engineering, Lehigh University. September 27, 2002. (Host: Arup Sengupta)
60. "Neural Network Approach for Prioritizing Drinking Water Contaminants: PCCL to CCL", NDWAC CCL Classification Process Work Group Meeting, U.S. Environmental Protection Agency, Office of Ground Water and Drinking Water, Washington, D.C. Sept. 18, 2002.

61. "Classifying Drinking Water Contaminants for Regulatory Consideration: A Neural Network Approach", ILSI Risk Sciences Institute meeting on *Exploring Approaches to Screening Chemicals for Reproductive/Developmental Toxicity*, Washington, D. C. June 21, 2002.
62. "A Neural Network Approach for Prioritizing Drinking Water Contaminants: An Explanation of the Recommendations of the NRC Committee on Drinking Water Contaminants", Contaminant Identification Meeting, American Water Works Association, Washington, D.C. April 25, 2002.
63. "$CO_2$ Storage in Deep Saline Aquifers", Department of Engineering and Public Policy and Department of Civil & Environmental Engineering, Carnegie Mellon University. April 22, 2002.
64. "A Neural Network Approach for Prioritizing Drinking Water Contaminants: An Explanation of the Recommendations of the NRC Committee on Drinking Water Contaminants", U.S. Environmental Protection Agency, Office of Ground Water and Drinking Water, Washington, D.C. Jan. 24, 2002.
65. "Risk Assessment for Subsurface Contamination Involving PAHs", PSE&G, Newark, New Jersey. July 2000.
66. "Risk Assessment for Subsurface Contamination Involving PAHs", Interagency Risk Assessment Committee (IRAC), New Jersey Department of Environmental Protection, Trenton, NJ. May 2000.
67. "Toward a Risk-Based Model for Multi-Component NAPL Contaminants: When is Remediation Intervention Worthwhile?" EPA Innovative Clean-Up Approaches. Nov. 1999, Bloomingdale, IL.
68. "Environmental Behavior and Risk Assessment of Complex Mixture NAPLs" The Environmental Science, Engineering and Policy in the 21st Century Seminar Series, University of Michigan. October 22, 1999.
69. "Environmental Behavior and Risk Assessment of Complex Mixture NAPLs", Department of Geography and Environmental Engineering, Johns Hopkins University. April 2, 1999.
70. "Environmental Behavior and Risk Assessment of Complex Mixture NAPLs", School of Environmental Science, Engineering, and Policy, Drexel University. Mar. 19, 1999.
71. "Long-Term Chemodynamics of NAPL Environmental Contaminants", Dept. of Environmental Sciences, Rutgers University. Mar. 27, 1998.
72. "Phase Behavior of Multi-Component NAPLs in the Environment", Hydrological Sciences Seminar Series, University of Colorado, Oct. 31, 1997.
73. "Phase Behavior of Multi-Component Environmental Contaminants", ALCOA Tech Cent, 08/1997.
74. "Organic Pollutants in the Subsurface Environment: Chemistry, Technology and Risk Assessment", Univ. of Dalecarlia, Borlange, Sweden. Host: Mr. Roger Bydler. Nov. 1996.
75. "The Chemistry of Multicomponent NAPLs Containing PAHs: Dissolution, Bioavailability, and Risk Assessment", Environmental Scholars Colloquium, Spring 1996, University of Connecticut, Storrs, CT, Feb. 2, 1996.
76. "Constraints and Uncertainties in Cleanup Strategies", Gordon Research Conference, Environmental Sciences: Water, June 19-24, 1994, New Hampton, NH.
77. "The Challenges of Hazardous Waste Site Management: Coal Tar Clean-Up as an Example". Presented at the Third International Summer School for Science and World Affairs, June 24-July 4, 1991, Moscow, USSR.

## INVITED PRESENTATIONS – OUTREACH and EDUCATION:

1. "Opportunities in Graduate School" Purdue Undergraduate Seminars in Environmental Engineering. Purdue University. February 2022.
2. "Managing the Triad of Teaching, Research and Service Post-Tenure" Panelist, AEESP Workshop, University of Michigan, Ann Arbor, MI, June 2017.
3. "Environmental Regulation in the U.S.: From Smog to Acid Rain to Greenhouse Gases", E-ffiliates Retreat, Princeton, NJ February 2017.
4. "The Science and Innovation of Fossil Fuels and the Environment", E-ffiliates Retreat, Princeton, NJ January 2016.
5. "Portable Power: Opportunities for Student Engagement", IEEE PCJS Education Society Chapter Meeting, Princeton University, April 10, 2013.

6. “Library Research Skills in Engineering Education”, Invited panelist for *Library Research Skills: Can They Be Taught?* May 2009, Princeton University Libraries.
7. “Energy, the Environment, and a Sustainable Future”, Keynote Address for the Society of Women Engineers, Princeton University, Nov 2008.
8. “Engineering and the Liberal Arts”, Symposium on Engineering and Liberal Education, Union College, Schenectady, NJ May 2008.
9. “Topics, Technology and the Times We Live In”, Colloquium for high school girls interested in engineering, Marymount High School, New York, NY. May 2007.
10. “Sustainable Energy in the CEE Curriculum”, Frontiers in Environmental Engineering Education, NSF-sponsored workshop, ASU January 2007.
11. “Engineering in a Liberal Arts Environment: Observations and Directions”, School of Engineering, University of Vermont, January 30, 2006.
12. “Putting $CO_2$ in its Place: Engineering Solutions to a Global Environmental Problem”, Presentation to all BSE freshmen, Princeton University, September 2004.
13. "Student Web Authoring in Environmental Engineering and Chemistry Courses". AEESP Research Frontiers Preconference Workshop on Computer-Based Learning Tools. Penn. State University. August 1999.
14. "Women Engineers in Academia: An American Perspective", 1996, Tomasmässan Convention on Women and Technology, Sponsored by Falu Ingeniörsklubb. Falun, Sweden, Nov. 1996.
15. "Women Engineers in Academia: An American Perspective", Univ. of Dalecarlia, Borlange, Sweden. Hosted by the Studenternas Näringslivsenhet, Nov. 1996.
16. "Instructional Web Technology in Engineering: Access to Course Materials and Software in and beyond Princeton", Faculty World Wide Web Workshops, Information Services, CIT, Princeton University, January 10-11, 1995.

## PEER REVIEWED JOURNAL PAPERS

1. J. Hu, A. Pattammattel, R.V. Tappero, T. Shimamura, J. Poonoosamy, C.A. Peters (2026, submitted) “Nickel Recovery via Coprecipitation with Calcium Carbonate: Synchrotron X-ray Spectroscopic Observations of Ni Uptake and Effects of Coexisting Zn and Co” *Environmental Science & Technology*. In review.
2. H.M. Kermani, C.A. Peters, H.M. Nick (2026) “Security of Geological $CO_2$ Storage is Enhanced via Self-Sealing Caprock Mineral Reactive Transport Mechanisms” *Environmental Research Letters*, 21(12): 124021. DOI 10.1088/1748-9326/ae7a96.
3. Conghao Yi, Catherine A. Peters, David R. Cole, (2026) “Geologic $H_2$ generation with simultaneous $CO_2$ mineralization: A dual strategy for energy decarbonization”, *International Journal of Hydrogen Energy*, Vol 247, 2026, 155861, DOI: 10.1016/j.ijhydene.2026.155861.
4. LN Pincus, CA Peters, C Yi, HM Kermani (2026) “Manganese and Cobalt in Olivine-Group Silicates Offer Potential for Natural $H_2$ Generation” *ACS Earth and Space Chemistry*. 10, 5, 1174–1184. DOI: 10.1021/acsearthspacechem.5c00301.
5. Peters, C.A. (2025) “Environmental Engineering Science: Taking on Today’s Environmental Grand Challenges” *Environmental Engineering Science* 42(9):363-369 DOI: 10.1089/ees.2025.0130.
6. V. Gadhamshetty; C.A. Peters; J.M. Cerrato; K.L. Nelson; H. Hsu-Kim; D.A. Ladner; L. Blaney. (2025) “Leadership in Environmental Engineering and Science: Celebrating Dr. Domenico Grasso’s Editorial Legacy and Presidential Appointment” *Environmental Engineering Science* 42(8):327-328, DOI: 10.1089/ees.2025.0117.
7. Hu, J.; L.N. Pincus; D. Wierzbicki; Y. Du; C.A. Peters (2025) “Carbon mineralization of sulfate wastes containing Pb: Synchrotron Pb M3-edge XANES analysis of simultaneous heavy metal and carbon sequestration” *Environmental Science & Technology*. DOI: 10.1021/acs.est.5c01640

8. C. Yi, C.A. Peters, V. Nikitin, S.S. Lee, P. Fenter (2025) "LABQ3: Bayesian method for quantification of mineral compositions and nano-scale elemental mapping of 3D synchrotron XCT data" *Computers and Geosciences*, 196:105858. DOI 10.1016/j.cageo.2025.105858.
9. M. Salehi, L.N. Pincus, B. Deng, C.A. Peters (2024) "Microplastics: From Intrinsic Properties to Environmental Fate" *Environmental Engineering Sci.*, 41(11):425-435 DOI:10.1089/ees.2024.0232.
10. M. Boon, I. Buntic, K. Ahmed, N. Dopffel, C. Peters, H. Hajibeygi (2024) "Microbial induced wettability alteration with implications for Underground Hydrogen Storage" *Scientific Reports*, 14:8248. DOI 10.1038/s41598-024-58951-6
11. Oerther, D.B.; Oerther, S.; Peters, C.A. (2024) "Environmental Engineers Solve Problems of Planetary Health" *Environmental Engineering Science*. 41:1, 3-6. DOI 10.1089/ees.2023.0301
12. S.J. Masten, R.M. Hozalski, T.H. Nguyen, C.A. Peters, K.H. Wammer (2023) "Microbial and Chemical Processes in Natural and Engineered Systems" *Environmental Engineering Science*. 40(11): 469-471. DOI 10.1089/ees.2023.0239.
13. Rivera, N.; Ling, F.; Jin, Z.; Pattammattel, A.; Yan, H.; Chu, Y.; Peters, C.; Hsu-Kim, H. (2023) "Nanoscale heterogeneity of arsenic and selenium species in coal fly ash particles: Analysis using enhanced spectroscopic imaging and speciation techniques" *Environmental Science: Nano.* Vol. 10, pp. 1768-1777. https://doi.org/10.1039/D2EN01056A.
14. Kim, J.J.; Lee, S.S.; Fenter, P.; Myneni, S.C.B.; Nikitin, V.; Peters, C.A. (2023) "Carbonate coprecipitation for Cd and Zn treatment and evaluation of heavy metal stability under acidic conditions" *Environ. Sci. & Technol.*, 57(8): 3104-3113. https://doi.org/10.1021/acs.est.2c07678.
15. Hajirezaie, S., Peters, C.A., Cole, D.R., Sheets, J.M., Kim, J.J., Swift, A.M., Crandall, D., Cheshire, M.C., Stack, A.G., Anovitz, L.M. (2022). "Sealing fractures to increase underground storage security: Lessons learned from a multiscale multimodal imaging study of a syntaxial vein in a mudrock." *Chemical Geology*, 614: 121164. https://doi.org/10.1016/j.chemgeo.2022.121164
16. H. Deng, M. Gharasoo, L. Zhang, Z. Dai, A. Hajizadeh, C.A. Peters, C. Soulaine, M. Thullner, P. Van Cappellen, (2022). "A perspective on applied geochemistry in porous media: Reactive transport modeling of geochemical dynamics and the interplay with flow phenomena and physical alteration", *Applied Geochemistry*, 146, pp. 105445, https://doi.org/10.1016/j.apgeochem.2022.105445.
17. J.J. Kim, F.T. Ling, D.A. Plattenberger, A.F. Clarens, C.A. Peters (2022) "Quantification of mineral reactivity using machine learning interpretation of micro-XRF data." *Applied Geochemistry*. https://doi.org/10.1016/j.apgeochem.2021.105162. Volume 136, 105162.
18. Postma, T., Bandilla, K.W., Peters, C.A., Celia, M.A., (2022) "Field-scale modeling of $CO_2$ mineral trapping in reactive rocks: A vertically integrated approach" *Water Resources Research*. 58(1): e2021WR030626 https://doi.org/10.1029/2021WR030626.
19. J.J. Kim, F.T. Ling, D.A. Plattenberger, A.F. Clarens, A. Lanzirotti, M. Newville, C.A. Peters (2021) "SMART mineral mapping: Synchrotron-based machine learning approach for 2D characterization with coupled micro XRF-XRD" *Computers & Geosciences*, Vol 156: 104898. https://doi.org/10.1016/j.cageo.2021.104898.
20. S.J. Masten, A. Harris, J. Kearns, A. Borrion, C.A. Peters, V.R. Gadhamshetty (2021) "Global Environmental Engineering for and with Historically Marginalized Communities" *Environmental Engineering Science*. 28(5):285-287. DOI: 10.1089/ees.2021.0103
21. H. Deng, A. Navarre-Sitchler, E. Heil, C. Peters (2021) "Addressing water and energy challenges with reactive transport modeling" *Environmental Engineering Science*. 38(3): 109-114. https://doi.org/10.1089/ees.2021.0009 .
22. FT Ling; DA Plattenberger; CA Peters; AF Clarens (2021) "Sealing porous media via calcium silicate reactions with $CO_2$ to enhance the security of geologic carbon sequestration" *Environmental Engineering Science*. 38(3): 127–142. https://doi.org/10.1089/ees.2020.0369.
23. HA Hunter, FT Ling, CA Peters (2021) "Coprecipitation of Heavy Metals in Calcium Carbonate from Coal Fly Ash Leachate" *ACS EST Water*. 1(2):339-345 DOI: 10.1021/acsestwater.0c00109.

24. A Mrad, GG Katul, DF Levia, AJ Guswa, EW Boyer, M Bruen, DE Carlyle-Moses, R Coyte, IF Creed, N van de Giesen, D Grasso, DM Hannah, JE Hudson, V Humphrey, S Iida, RB Jackson, T Kumagai, P Llorens, B Michalzik, K Nanko, CA Peters. J Selker, D Tetzlaff, M Zalewski, BR Scanlon. (2020) "Peak grain forecasts for the U.S. High Plains amid withering waters" *PNAS*. 117(42) 26145-26150. https://doi.org/10.1073/pnas.2008383117
25. Deng, H.; Fitts, J.P.; Tappero, R.V.; Kim, J.J.; Peters, C.A. (2020) "Acid erosion of carbonate fractures and accessibility of arsenic-bearing minerals: *In Operando* synchrotron-based microfluidic experiment" *Environ. Sci. Technol.* 2020, 54(19):12502-12510. https://doi.org/10.1021/acs.est.0c03736
26. D.F. Levia, I.F. Creed, D.M. Hannah, K. Nanko, E.W. Boyer, D.E. Carlyle-Moses, N. van de Giesen, D. Grasso, A.J. Guswa, J.E. Hudson, S.A. Hudson, S. Iida, R.B. Jackson, G.G. Katul, T. Kumagai, P. Llorens, F. Lopes Ribeiro, D.E. Pataki, C.A. Peters, D. Sanchez Carretero, J.S. Selker, D. Tetzlaff, M. Zalewski, M. Bruen. (2020) "Homogenization of the terrestrial water cycle" *Nature Geoscience.* 13, 656-658. https://doi.org/10.1038/s41561-020-0641-y
27. A.J. Guswa, D. Tetzlaff, J.S. Selker, D.E. Carlyle-Moses, E.W. Boyer, M. Bruen, C. Cayuela, I.F. Creed, N. van de Giesen, D. Grasso, D.M. Hannah, J.E. Hudson, S.A. Hudson, S. Iida, R.B. Jackson, G.G. Katul, T. Kumagai, P. Llorens, F.L. Ribeiro, B. Michalzik, K. Nanko, C. Oster, D.E. Pataki, C.A. Peters, A. Rinaldo, D. Sanchez Carretero, B. Trifunovic, M. Zalewski, D.F. Levia. (2020) "Advancing ecohydrology in the 21st century: a convergence of opportunities." *Ecohydrology.* Vol 13, Iss 4, 13:e2208. https://doi.org/10.1002/eco.2208
28. D. Plattenberger, T. Brown, F.T. Ling, X. Lyu, J. Fitts, C.A. Peters, A.F. Clarens. (2020) "Feasibility of using reactive silicate particles with temperature-responsive coatings to enhance the security of geologic carbon storage." *International Journal of Greenhouse Gas Control*. Vol.95, 102976. https://doi.org/10.1016/j.ijggc.2020.102976
29. H.A. Hunter, F.T. Ling, C.A. Peters. (2020) "Metals Coprecipitation with Barite: Nano-XRF Observation of Enhanced Strontium Incorporation." *Environmental Engineering Science*. 37(4): 235-245. DOI: 10.1089/ees.2019.0447.
30. Spokas, K., Fang, Y., Fitts, J. P., Peters, C. A., Elsworth, D. (2019). "Collapse of reacted fracture surface decreases permeability and frictional strength." *Journal of Geophysical Research: Solid Earth*, 124(12):12799-12811. DOI: 10.1029/2019JB017805
31. Grady, C.A.; Blumsack, S.; Mejia, A.; Peters, C.A. (2019) "The Food-Energy-Water Nexus: Security, Sustainability, and Systems Perspectives" *Environ. Eng. Science*. 36(7): 761-762.
32. Plattenberger, D.A., Ling, F.T., Peters, C.A., Clarens, A.F. (2019) "Targeted permeability control in the subsurface via calcium silicate carbonation" *Environ. Sci. & Technol.*, 53:7136-7144. DOI: 10.1021/acs.est.9b00707.
33. Deng, H.; Peters, C.A. (2019) "Reactive Transport Simulation of Fracture Channelization and Transmissivity Evolution" *Environmental Engineering Science*. 36(1):90-101. https://doi.org/10.1089/ees.2018.0244
34. Lu L., J.S. Guest, C.A. Peters, X. Zhu, G.H. Rau, Z.J. Ren (2018) "Wastewater treatment for carbon capture and utilization", *Nature Sustainability*, NATSUSTAIN-17120894C, Vol. 1, pp. 750-758. https://www.nature.com/articles/s41893-018-0187-9
35. Ling, F.T., Hunter, H.A., Fitts, J.P., Peters, C.A., Acerbo, A.S., Huang, X., Yan, H., Nazaretski, E., Chu, Y.S. (2018) "Nanospectroscopy Captures Nanoscale Compositional Zonation in Barite Solid Solutions" *Scientific Reports*, 8(1): 13041. https://doi.org/10.1038/s41598-018-31335-3
36. Spokas, K., Peters, C.A., Pyrak-Nolte, L. (2018) "Influence of Rock Mineralogy on Reactive Fracture Evolution in Carbonate-Rich Caprocks" *Environmental Science & Technology*, 52 (17), pp. 10144-10152. https://doi.org/10.1021/acs.est.8b01021

37. Plattenberger, D.A., Ling, F.T., Tao, Z., Peters, C.A., Clarens, A.F. (2018) "Calcium Silicate Crystal Structure Impacts Reactivity with $CO_2$ and Precipitate Chemistry" *Environmental Science & Technology Letters*. 2018, 5 (9), pp 558–563. https://doi.org/10.1021/acs.estlett.8b00386
38. Safford, H.; Peters, C.A. (2018) "Citizen science for dissolved-oxygen monitoring: Case studies from Georgia and Rhode Island" *Environmental Engineering Science*. Volume 35, Number 4, 2018. DOI: 10.1089/ees.2017.0218.
39. H. Deng, J.M. Bielicki, M. Oppenheimer, J.P. Fitts, C.A. Peters (2017) "Leakage risks of geologic $CO_2$ storage and the impacts on the global energy system and climate change mitigation" *Climatic Change*. 144(2):151–163.
40. S. Hajirezaie, X. Wu, C. A. Peters (2017) "Scale formation in porous media and its impact on reservoir performance during water flooding." *Journal of Natural Gas and Engineering* 39: 188-202. DOI 10.1016/j.jngse.2017.01.019
41. J.M. Bielicki, H. Deng, J.P. Fitts, C.A. Peters, E.J. Wilson (2017) "Monetizing Leakage Risk with Secondary Trapping in Intervening Stratigraphic Layers." *Energy Procedia*, 114 (2017): 4256-4261.
42. A.F. Clarens and C.A. Peters (2016) "Mitigating climate change at the carbon water nexus: A call to action for the environmental engineering community" *Environmental Engineering Science*. 33(10): 719-724.
43. B.R. Ellis and C. A. Peters (2016) "3D mapping of calcite and a demonstration of its relevance to permeability evolution in reactive fractures", *Advances in Water Resources*. 95: 246-253.
44. J.M. Bielicki, M.F. Pollak, H. Deng, E.J. Wilson, J.P. Fitts, C.A. Peters (2016) "The Leakage Risk Monetization Model for Geologic $CO_2$ Storage" *Environmental Science & Technology*. 50(10) May 2016, 4923-4931.
45. Deng, H.; Fitts, J.P.; Peters, C.A. (2016) "Quantifying Fracture Geometry with X-ray Tomography: Technique of Iterative Local Thresholding (TILT) for 3D Image Segmentation", *Computational Geosciences*. 20:231–244.
46. B. Guo, P. Fu, Y. Hao, C.A. Peters, C.R. Carrigan. (2016) "Thermal drawdown-induced flow channeling in a single fracture in EGS". *Geothermics*. Vol. 61 pages 46-62. doi:10.1016/j.geothermics.2016.01.004.
47. Deng, H.; Fitts, J.P.; Crandall, D.; McIntyre, D.; Peters, C.A. (2015) "Alterations of fractures in carbonate rocks by $CO_2$-acidified brines" *Environmental Science & Technology*. Vol. 49, Issue 16, pp. 10226-10234.
48. J.M. Bielicki, C.A. Peters, J.P. Fitts, E.J. Wilson. (2015) "An Examination of Geologic Carbon Sequestration Policies in the Context of Leakage Potential" *International Journal of Greenhouse Gas Control*. 37:61-75.
49. D.E. Giammar, F. Wang, B. Guo, J.A. Surface, C.A. Peters, M.S. Conradi, S.E. Hayes (2014) "Impacts of Diffusive Transport on Carbonate Mineral Formation from Magnesium Silicate-$CO_2$-Water Reactions", *Environmental Science & Technology*, 48(24), 14344-14351. https://doi-org.ezproxy.princeton.edu/10.1021/es504047t.
50. J.M. Bielicki; M.F. Pollak; J.P. Fitts; C.A. Peters, E.J. Wilson. (2014) "Causes and Financial Consequences of Geologic $CO_2$ Storage Reservoir Leakage and Interference with other Subsurface Resources". *International Journal of Greenhouse Gas Control*. Vol. 20: 272-284.
51. H. Deng, J.M. Bielicki, M. Oppenheimer, J.P. Fitts, C.A. Peters (2014) "Policy implications of Monetized Leakage Risk from Geologic $CO_2$ Storage Reservoirs" International Conf. on Greenhouse Gas Technologies (GHGT-12), October 2014, Austin, TX. *Energy Procedia*, 63: 6852-6863.
52. J.P. Fitts and C.A. Peters, "Caprock Fracture Dissolution and $CO_2$ Leakage", (2013) In: Geochemistry of Geologic $CO_2$ Sequestration (Eds: DJ DePaolo, DR Cole, A Navrotsky, IC Bourg), *Reviews in Mineralogy & Geochemistry* Vol 77: 459 – 479 (2013).

53. L.E. Beckingham; C.A. Peters; W. Um; K.W. Jones; W.B. Lindquist. (2013) "2D and 3D imaging resolution trade-offs in quantifying pore throats for prediction of permeability" *Advances in Water Resources*. 62: 1-12.
54. J.P. Nogues, J.P. Fitts, M.A. Celia, C.A. Peters. (2013) "Permeability evolution due to dissolution and precipitation of carbonates using reactive transport modeling in pore networks", *Water Resources Research*, Vol 49(6): 6006-6021, doi:10.1002/wrcr.20486, 2013.
55. Deng, H.; Ellis, B.R.; Peters, C.A.; Fitts, J.P.; Crandall, D.; Bromhal, G.S. (2013) "Modifications of carbonate fracture hydrodynamic properties by $CO_2$-acidified brine flow". *Energy and Fuels.* 27(8): 4221 – 4231 DOI: 10.1021/ef302041s.
56. K.W. Jones, J. Wang, Y.-C. Chen, Q. Yuan, W.B. Lindquist, L. Beckingham, C.A. Peters, W. Um, L. Newman, T. Sabo-Attwood, R. Tappero, (2013) "Tomographic Investigations Relevant to the Rhizosphere," In: Soil-Water-Root Processes: Advances in Tomography and Imaging. SSSA Special Publication 61, S.H. Anderson and J.W. Hopmans, editors; Agronomy Journal. 2013.
57. B.R. Ellis, J.P. Fitts, G.S. Bromhal, D.L. McIntyre, R. Tappero, C.A. Peters. (2013) "Dissolution-Driven Permeability Reduction of a Fractured Carbonate Caprock". *Environmental Engineering Science,* 30(4): 187-193. 2013. DOI: 10.1089/ees.2012.0337
58. J.M. Bielicki, M.F. Pollak, E.J. Wilson, J.P. Fitts, C.A. Peters, (2013) "A Methodology for Monetizing Basin-Scale Leakage Risk and Stakeholder Impacts." International Conference on Greenhouse Gas Technologies (GHGT-11), November 2012, Kyoto, Japan. Energy Procedia, 37: 4665-4672.
59. C.M. Oldenburg, C. Doughty, C.A. Peters, and P.F. Dobson. (2013) "Simulations of upward leakage of CO2 in long-column flow experiments: The impact of boundary conditions and three-phase relative permeability." International Conference on Greenhouse Gas Technologies (GHGT-11), November 2012, Kyoto, Japan. Energy Procedia, 37: 3486-3494.
60. M.F. Pollak, J.M. Bielicki, J.A. Dammel, E.J. Wilson, J.P. Fitts, C.A. Peters. (2013) "The Leakage Impact Valuation (LIV) Method for Leakage from Geologic CO2 Storage Reservoirs" International Conference on Greenhouse Gas Technologies (GHGT-11), November 2012, Kyoto, Japan. Energy Procedia, 37: 2819-2827.
61. Oldenburg, C.; Doughty, C.; Peters, C.A.; Dobson, P. (2012) "Simulations of long-column flow experiments related to geologic carbon sequestration: Effects of outer wall boundary condition on upward flow and formation of liquid $CO_2$" *Greenhouse Gases: Science and Technology*, 2(4): 279-303. DOI: 10.1002/ghg.1294.
62. L.E. Crandell, C.A. Peters, W. Um, K.W. Jones, W.B. Lindquist, 2012. "Changes in the pore network structure of Hanford sediment after reaction with caustic tank wastes." *Journal of Contaminant Hydrology* 131 (2012) 89–99.
63. B.R. Ellis, C.A. Peters, J.P. Fitts, G.S. Bromhal, D.L. McIntyre, R.P. Warzinski, E.J. Rosenbaum. 2011. "Deterioration of a fractured carbonate caprock exposed to $CO_2$-acidified brine flow" *Greenhouse Gases: Science and Technology*. Vol 1, Issue 3, 248-260.
64. Kim, D., W. B. Lindquist, C. A. Peters, (2011), Upscaling geochemical reaction rates accompanying acidic $CO_2$-saturated brine flow in sandstone aquifers, *Water Resour. Res.*, 47, W01505, doi:10.1029/2010WR009472.
65. Ellis, B.R.; Bromhal, G.S.; McIntyre, D.L.; Peters, C.A. 2011. "Changes in caprock integrity due to vertical migration of $CO_2$-enriched brine", *Energy Procedia*, 4: 5327-5334. 10th Int'l Conf. on Greenhouse Gas Control Technologies, September 2010, Amsterdam, The Netherlands.
66. C. A. Peters, P. F. Dobson, C. M. Oldenburg, J. S.Y. Wang, T. C. Onstott, G. W. Scherer, B. M. Freifeld, T. S. Ramakrishnan, Eric Stabinski, Kenneth Liang, Sandeep Verma. 2011. "LUCI: A Facility at DUSEL for Large-Scale Experimental Study of Geologic Carbon Sequestration", *Energy Procedia*, 4:5050-5057. 10th Int'l Conf. on Greenhouse Gas Control Technologies, September 2010, Amsterdam, The Netherlands.

67. Ray, S.; C. A. Peters. 2010. “Adaptations in microbiological populations exposed to dinitrophenol and other chemical stressors.” *Environmental Toxicology & Chemistry*. 29(10), pp. 2161-2168.
68. Ellis, B.R., Crandell, L.E., Peters, C.A. 2010. “Limitations for Brine Acidification due to $SO_2$ Co-injection in Geologic Carbon Sequestration.” *International Journal of Greenhouse Gas Control*. 4(3):575-582. DOI 10.1016/j.ijggc.2009.11.006.
69. Crandell, L.E., Ellis, B.R., Peters, C.A. 2010. “Dissolution Potential of $SO_2$ Co-Injected with $CO_2$ in Geologic Sequestration.” *Environmental Science & Technology*. 44 (1): 349–355. DOI 10.1021/es-2009-02612m.
70. Peters, C. A. 2009. “Accessibilities of reactive minerals in consolidated sedimentary rock: An imaging study of three sandstones.” *Chemical Geology*, 265: 198-208. doi: 10.1016/j.chemgeo.2008.11.014.
71. Schulman, A. and C. A. Peters. 2008. “GIS analysis of urban schoolyard landcover in three U.S. cities”, *Urban Ecosystems* 11: 65-80. DOI 10.1007/s11252-007-0037-4.
72. Ray, S. and C. A. Peters. 2008. “Changes in Microbiological Metabolism under Chemical Stress”. *Chemosphere* 71(3):474-483. doi: 10.1016/j.chemosphere.2007.10.026.
73. Li, L.; C. A. Peters; M. A. Celia. 2007. “Applicability of Averaged Concentrations in Determining Geochemical Reaction Rates in Heterogeneous Porous Media”, *American Journal of Science* 307(10): 1146-1166. DOI 10.2475/10.2007.02.
74. Li, L.; C. A. Peters; M. A. Celia. 2007. “Effects of mineral spatial distribution on reaction rates in porous media”, *Water Resources Research.* 43(1): Article no. W01419, doi: 10.1029/2005WR004848.
75. Li, L.; C. A. Peters; M. A. Celia. 2007. “Reply to ‘Comment on upscaling geochemical reaction rates using pore-scale network modeling’ by Peter C. Lichtner and Qinjun Kang”, *Advances in Water Resources*, 30(3): 691-695.
76. Knightes, C. D. and C. A. Peters. 2006. “Multisubstrate Biodegradation Kinetics for Binary and Complex Mixtures of Polycyclic Aromatic Hydrocarbons.” *Environmental Toxicology and Chemistry*, 25(7): 1746-1756.
77. Li, L.; C. A. Peters; M. A. Celia. 2006. “Upscaling geochemical reaction rates using pore-scale network modeling” *Advances in Water Resources* 29: 1351-1370.
78. Wammer, K.H. and C. A. Peters. 2006. “A Molecular Modeling Analysis of Polycyclic Aromatic Hydrocarbon Biodegradation by Naphthalene Dioxygenase” *Environmental Toxicology and Chemistry*, 25(4): 912-920.
79. Giammar, D. E.; R. G. Bruant, Jr.; and C. A. Peters. 2005. “Forsterite Dissolution and Magnesite Precipitation at Conditions Relevant for Deep Saline Aquifer Storage and Sequestration of Carbon Dioxide”, *Chemical Geology*, 217(3-4):257-276. https://doi.org/10.1016/j.chemgeo.2004.12.013
80. Wammer, K. H. and C. A. Peters. 2005. “Polycyclic Aromatic Hydrocarbon Biodegradation Rates: A Structure-Based Study”, *Environmental Science and Technology*, 39(8):2571-2578.
81. Lee, K., and C. A. Peters. 2004. “UNIFAC Modeling of Cosolvent Phase Partitioning in Nonaqueous Phase Liquids-Water Systems”, *Journal of Environmental Engineering*, ASCE. 130(4): 478-483.
82. Li, L.; C. A. Peters; M. A. Celia. 2004. “Upscaling calcite dissolution rates using network model simulations.” Water-Rock Interactions: Proc. Eleventh International Symposium on Water-Rock Interactions, WRI-11, (Peer Reviewed). R. B. Wanty and R. R. Seal II (Eds.), A. A. Balkema Publishers, London. pp 961-965.
83. Knightes, C. D., C. A. Peters. 2003. "Aqueous Phase Biodegradation Kinetics of Ten PAH Compounds", *Environmental Engineering Science*, 20(3):207-218.
84. Bruant, Robert G. Jr.; Guswa, Andrew J.; Celia, Michael A.; Peters, Catherine A. 2002. “Safe Storage of Carbon Dioxide in Deep Saline Aquifers”, Feature article in *Environmental Science & Technology*. 36(11):240A-245A.

85. Knightes, C. D., C. A. Peters. 2000. "Statistical Analysis of Nonlinear Parameter Estimation for Monod Biodegradation Kinetics for Bivariate Data", Biotechnology & Bioengineering. 69: 160-170.
86. Peters, C. A., K. H. Wammer, C. D. Knightes. 2000. "Multicomponent NAPL Solidification Thermodynamics", Transport in Porous Media, 38(1-2):57-77.
87. Brown, D. B., C. D. Knightes, C. A. Peters. 1999. "Risk Assessment for Polycyclic Aromatic Hydrocarbon NAPLs Using Component Fractions" Policy Analysis section of *Environmental Science & Technology*. 33(24):4357-4363.
88. Peters, C. A., C. D. Knightes, D. G. Brown. 1999. "Long-Term Composition Dynamics of PAH-Containing NAPLs and Implications for Risk Assessment", *Environmental Science & Technology*, 33(24):4499-4507.
89. Guha, S., C. A. Peters, P. R. Jaffe. 1999. "Multisubstrate Biodegradation Kinetics of Naphthalene, Phenanthrene and Pyrene Mixtures", *Biotechnology & Bioengineering*. 65(5):491-499.
90. Peters, C. A., Mukherji, S., Weber, W. J., Jr. 1999. "UNIFAC Modeling of Multicomponent Nonaqueous Phase Liquids Containing Polycyclic Aromatic Hydrocarbons", *Environmental Toxicology and Chemistry*. 18(3):426-429.
91. Guha, S., P. R. Jaffe, C. A. Peters. 1998. "Bioavailability of Mixtures of PAHs Partitioned into the Micellar Phase of a Non-ionic Surfactant", *Environmental Science & Technology*, 32(15): 2317-2324.
92. Guha, S., P. R. Jaffe, C. A. Peters. 1998. "Solubilization of PAH Mixtures by a Nonionic Surfactant", *Environmental Science & Technology*, 32(7):930-935.
93. Peters, C. A., Mukherji, S., Knightes, C. D., Weber, W. J., Jr. 1997. "Phase Stability of Multicomponent NAPLs Containing PAHs", *Environmental Science & Technol.*, 31(9): 2540-2546.
94. Mukherji, S., C. A. Peters, W. J. Weber, Jr. 1997. "Mass Transfer of Polynuclear Aromatic Hydrocarbons (PAHs) from Complex DNAPL Mixtures", *Environmental Science & Technology*, 31(2):416-423.
95. Peters, C. A., P. A. Labieniec, and C. D. Knightes. 1996. "Multicomponent NAPL Composition Dynamics and Risk". Proc. ASCE Annual Convention: Non-Aqueous Phase Liquids (NAPLs) in the Subsurface Environment: Assessment and Remediation. (Peer-Reviewed) L. N. Reddi, Ed. Washington, DC, Nov. 1996, pp. 681-692.
96. Mukherji, S., C. A. Peters, W. J. Weber, Jr. 1996. "Rates of Release of PAHs from DNAPL Mixtures". Proc. ASCE Annual Convention: Non-Aqueous Phase Liquids (NAPLs) in the Subsurface Environment: Assessment and Remediation. (Peer-Reviewed) L. N. Reddi, Ed. Washington, DC, Nov. 1996, pp. 575-582.
97. Peters, C. A. and R. G. Luthy. 1994. "Semi-Empirical Thermodynamic Modeling of Liquid-Liquid Phase Equilibria: Coal Tar Dissolution in Water-Miscible Solvents", *Environmental Science & Technology*, 28(7):1331-1340.
98. Luthy, R. G., D. A. Dzombak, C. A. Peters, S. B. Roy, A. Ramaswami, D. V. Nakles, B. R. Nott. 1994. "Remediating Tar-Contaminated Soils at Manufactured Gas Plant Sites: Technological Challenges". Feature article in *Environmental Science & Technology*, 28(6):266A-276A.
99. Peters, C. A. and R. G. Luthy. 1993. "Coal Tar Dissolution in Water-Miscible Solvents: Experimental Evaluation". *Environmental Science & Technology*, 27(13), 2831-2843.
100. Small, M. J. and C. A. Peters. 1988. "Public policy model for the indoor radon problem". Mathematical and Computer Modelling, Vol. 10, No. 5, pp. 349-358.

## PUBLISHED DATA SETS

1. C.A. Peters (2024) "(Ca,Cd,Zn)$CO_3$ synchrotron nano-XCT images and 3D elemental maps" [Dataset] *Digital Rocks Portal*, Project 507. https://www.digitalrocksportal.org/projects/507
2. C.A. Peters, S. Hajirezaie, J.J. Kim, and D. Crandall (2021), "Mineralized fracture in a mudrock shale", [Dataset] *Digital Rocks Portal*, Project 283. https://doi.org/10.17612/P4WH-W011

3. Crandall, D.; Peters, C.A.; Hajirezaie, S. (Oct 28, 2021) 'Computed Tomography Scans of Naturally Mineralized Fractures in Upper Wolfcamp Shale' [Dataset] EDX: NETL's Energy Data eXchange. DOI: 10.18141/1827827 https://edx.netl.doe.gov/dataset/computed-tomography-scans-of-naturally-mineralized-fractures-in-upper-wolfcamp-shale
4. Peters, C.A. Kim, J.J. (2020) "Eagle Ford Shale: Synchrotron-Based Element and Mineral Maps." *Digital Rocks Portal*, Project 258, DOI 10.17612/T3A6-6356 http://www.digitalrocksportal.org/projects/258
5. Peters, C.A., Deng, H. 'TILT' Technique of Iterative Local Thresholding, image processing tool for analyzing 3D x-ray Computed Tomography (xCT) images of fractured media. http://tilt.princeton.edu/

## EDITORIALS, BOOK REVIEWS, LETTERS TO THE EDITOR, VIDEOS

1. Yi, C.; Peters, C.A. (2024) "Quantitative XCT for Mineral and Element Compositions: LABQ3 Bayesian Model for XCT Data Analysis" Youtube video. https://youtu.be/5ysHm8YC7as.
2. M. Li, M.J. Krzmarzick, C.A. Peters (2022) "AEESP Spotlight: Mid 2022" *Environmental Engineering Science* 39(6): 584-585.
3. D.A. Ladner, M.J. Krzmarzick, C.A. Peters (2022) "AEESP Spotlight: Early 2022" *Environmental Engineering Science* 39(2): 193-194.
4. V. Gadhamshetty, M.J. Krzmarzick, C.A. Peters (2021) "AEESP Spotlight: Late 2021" *Environmental Engineering Science* 38(10): 1010-1011.
5. S.J. Masten, M.J. Krzmarzick, C.A. Peters (2021) "AEESP Spotlight: Mid 2021" *Environmental Engineering Science* 38(6):575–576.
6. D.A. Ladner, M.J. Krzmarzick, C.A. Peters (2021) "AEESP Spotlight: Early 2021" *Environmental Engineering Science* 38(2): 107-108.
7. D.B. Oerther, C.A. Peters (2020) "Think-Pair-Listen in the Online COVID-19 Classroom" *Environmental Engineering Science* 37(10): 647-648. DOI: 10.1089/ees.2020.0395
8. B. Deng, M.J. Krzmarzick, C.A. Peters (2020) "AEESP Spotlight: Late 2020" *Environmental Engineering Science* 37(10):715-716.
9. V. Gadhamshetty, M.J. Krzmarzick, C.A. Peters (2020) "AEESP Spotlight: Mid 2020" *Environmental Engineering Science* 37(6):457-458.
10. D.B. Oerther, C.A. Peters (2020) "Educating Heads, Hands and Hearts in the COVID-19 Classroom" *Environmental Engineering Science*. 37(5): 303.
11. D.G. Brown, M.J. Krzmarzick, S.J. Masten, C.A. Peters (2020) "AEESP Journal Spotlight: Early 2020" *Environmental Engineering Science* 37(2):169-170.
12. V. Gadhamshetty, S.J. Masten, C.A. Peters, D. Grasso (2019) "AEESP Journal Spotlight: Late 2019" *Environmental Engineering Science* 36(10):1367.
13. Deng, B.; Masten, S.J.; Peters, C.A.; Grasso, D. (2019) "AEESP Journal Spotlight: Mid 2019" *Environmental Engineering Science* 36(6):760.
14. Krzmarzick, M.J.; Masten, S.J.; Peters, C.A.; Grasso, D. (2019) "AEESP Journal Spotlight: Early 2019" *Environmental Engineering Science* 36(2):262-263.
15. Brown, D.G., Masten, S.J., Peters, C.A., Grasso, D. (2018) "AEESP Journal Spotlight: Late 2018" *Environmental Engineering Science*, 35 (10), p. 1148.
16. Masten, S.J., Peters, C.A., Grasso, D. (2018) "AEESP Journal Spotlight: Mid 2018" *Environmental Engineering Science* 35 (6): 662.
17. Brown, D.G., Peters, C.A., Masten, S.J., Grasso, D. (2018) "AEESP Journal Spotlight: Early 2018" *Environmental Engineering Science*, 35 (2), 141.

18. Peters, C. A., Masten, S.J., Grasso, D. (2017) "AEESP Journal Spotlight: Late 2017" *Environmental Engineering Science* 34(10): 771.
19. Krzmarzick M., Peters C.A., Masten S.J., Grasso D. (2017) "AEESP Journal Spotlight: Mid 2017" *Environmental Engineering Science* 34(6): 460.
20. Grasso, D., Peters, C.A., Masten, S. (2017). "AEESP journal spotlight: Early 2017.' *Environmental Engineering Science*, 34(2): 138.
21. C.A. Peters (2016) "Whispering the Secrets of Molecules in Small Spaces." Book Review: Pore-Scale Geochemical Processes, RIMG Volume 80. *American Mineralogist*. 101 (11), 2574-2575.
22. Grasso, D., Peters, C.A., Masten, S.J. (2016) "AEESP Journal Spotlight: Late 2016." *Environmental Engineering Science*, 33(10): 839.
23. Grasso, D., Peters, C.A., Masten, S.J. (2016). "AEESP journal spotlight: Mid 2016." *Environmental Engineering Science*, 33(6), 441.
24. Grasso, D., Peters, C.A., Masten, S. (2016). "AEESP journal spotlight: Early 2016." *Environmental Engineering Science*, 33(2), 148.

## BOOKS, BOOK CHAPTERS, NRC COMMITTEE REPORTS:

1. Parkin R, Ragain L, Embrey M, Peters C, Butte G, and Thorne S. Risk Communication for Emerging Contaminants. Denver, CO: American Water Works Association Research Foundation. 2004.
2. Classifying Drinking Water Contaminants for Regulatory Consideration, Committee on Drinking Water Contaminants, Water Science and Technology Board, National Research Council, National Academy Press, Washington, D. C. 2001.
3. Peters, C. A. "Statistics for Analysis of Experimental Data", In: AEESP Environmental Engineering Processes Laboratory Manual, Eds. S. E. Powers; J. J. Bisogni Jr.; Burken, J. G.; Pagilla, K. Association of Environmental Engineering and Science Professors, Champaign, IL. 2001.
4. Identifying Future Drinking Water Contaminants, Committee on Drinking Water Contaminants, Water Science and Technology Board, National Research Council, National Academy Press, Washington, D.C. August 1999.
5. Setting Priorities for Drinking Water Contaminants, Committee on Drinking Water Contaminants, Water Science and Technology Board, National Research Council, National Academy Press, Washington, D.C. January 1999.

## CONFERENCE PRESENTATIONS AND ABSTRACTS:

1. H. Deng, Z. Gong, C.A. Peters, C. Yi, L. Eguiguren, "A reactive transport modeling perspective on co-practicing $CO_2$ mineralization and geologic hydrogen generation" AGU Annual Meeting 2026.
2. J. Hu, C.A. Peters, "Nickel Coprecipitation with Calcium Carbonate with Coexisting Zinc and Cobalt" AGU Annual Meeting 2026.
3. C.A. Peters, L. Li, D.E. Giammar, B.R. Ellis, L.E. Beckingham, H. Deng, J.M. Bielicki, K. Spokas, A. Clarens, D. Plattenberger, F.T. Ling, D. Crandall, D.R. Cole, H. Kermani, H.M. Nick, "Safe Geologic Carbon Storage: A Weight of Evidence for Secure, Durable, Reliable Sequestration of $CO_2$" AGU Annual Meeting 2026. ***INVITED***
4. Conghao Yi, Jun Hu, Luis Eguiguren, Catherine A Peters, "Siderite unleashed: An Fe-efficient feedstock for scalable geologic $H_2$ production" AGU Annual Meeting 2026.
5. C.A. Peters, C. Yi, D.R. Cole, "Toward Carbon-Negative Energy through Coupled Geologic $H_2$ Generation and $CO_2$ Sequestration" AGU Annual Meeting 2026. ***INVITED***
6. C.A. Peters, (2026) "Geologic $H_2$ generation with simultaneous $CO_2$ mineralization: A dual strategy for energy decarbonization*" Conference on Geo-Solutions for the Energy Transition*. June 2026 organized by the Earth Resources Laboratory at MIT.

7. C.A. Peters (2026) "Geologic $H_2$ generation with simultaneous $CO_2$ mineralization: A dual strategy for energy decarbonization" Reactive Transport Workshop, Cologne, Germany. ***INVITED Keynote Speaker***
8. C Yi, DR Cole, CA Peters "Natural $H_2$ Generation and Mineral Alteration in Porous Media: Insights on Physiochemical Controls from Geochemical Simulations" AGU Annual Meeting Dec 2025.
9. J. Hu, C. A. Peters, "Carbon Mineralization of Sulfate Wastes Containing Pb: Synchrotron Pb M3-Edge XANES Analysis of Simultaneous Heavy Metal and Carbon Sequestration", Synchrotron Environmental Science (SES) Symposium, Stony Brook University, September 2025.
10. C.A. Peters, (2025) "Geologic $H_2$ Generation: An Accelerated Pathway to Energy Decarbonization". AEESP 2025 Research and Education Conference, Duke University, Durham, NC. May 2025. ***INVITED Keynote Speaker***
11. C.A. Peters, L.N. Pincus, H.M. Kermani, C. Yi, H. Nick. (2025) "Natural $H_2$ generation from silicate weathering reactions involving iron and other transition metals". ACS Spring 2025 Meeting. San Diego, CA ***INVITED Speaker***
12. C. Yi, C.A. Peters, V. Nikitin, S.S. Lee, P. Fenter (2025) "LABQ3 quantification of mineral composition heterogeneity in 3D using XCT" ACS Spring 2025 Meeting. San Diego, CA. ***INVITED Speaker***
13. C.A. Peters, D.R. Cole, S. Myneni, C. Yi, L. Pincus, H. M. Kermani, (2024) "Generating Natural $H_2$ while Simultaneously Mineralizing $CO_2$: A Coupled Pathway to Energy Decarbonization" AGU Fall Meeting 2024. MR13B-3191.
14. J. Hu, L.N. Pincus, C.A. Peters (2024) "Carbonation of sulfate wastes containing Pb: Examining the possibility of simultaneous heavy metal and carbon sequestration" 2024 Goldschmidt Conference. August 2024.
15. C.A. Peters (2024) "Orthogonally different mineral reactions, same outcome of permeability reduction: How can this be?" ***INVITED Speaker***. InterPore2024 16th Annual Meeting. May 2024 Qingdao, China.
16. R. Tang; C.A. Peters (2024) "Calcium carbonate as a host mineral for trace metal coprecipitation: Ni removal from water and resource recovery" ACS Spring Meeting.
17. C.A. Peters, L.E. Beckingham, L.N. Pincus, Z. Shi, H. Hajibeygi, N. Dopffel (2023) "Underground Hydrogen Storage and Geochemical Considerations Regarding $H_2S$: Prevalence and Accessibility of Sulfate Minerals" AGU Fall Meeting 2023. GC54E-01.
18. C.A. Peters, J.J. Kim, S.S. Lee, P. Fenter, S. Myneni, V. Nikitin (2023) "Arsenic Removal from Water via Calcium Carbonate Coprecipitation". AGU Fall Meeting 2023. H53N-1505.
19. C. Yi, R. Tang, J.J. Kim, V. Nikitin, P. Fenter, S.S. Lee, C.A. Peters (2023), "Mapping and Quantification of Mineral Compositions: Bayesian Model for Synchrotron X-ray Nano CT Data." AGU Fall Meeting 2023. MR34A-103D.
20. Peters, C.A. (2023) "Pathways to decarbonization through carbon sequestration and mineralization", ACS Fall Meeting, 'Improving Water Quality by Understanding Environmental Chemical Processes: A Symposium in Honor of Richard G. Luthy".
21. Peters, C.A. (2023). "Joining the global effort for decarbonization through a comprehensive understanding of hydro-geochemical processes in the subsurface" ***INVITED Keynote Speaker***. Goldschmidt 2023 Conference. Lyon, France.
22. L.E. Beckingham, Z. Shi, C.A. Peters, H. Hajibeygi, N. Dopffel. (2023). "Sulfur oxidation states in underground salt caverns and sedimentary formations: Geochemical considerations for underground $H_2$ storage" Goldschmidt 2023 Conference. Lyon, France. https://doi.org/10.7185/gold2023.20789
23. L.E. Beckingham, Z. Shi, C.A. Peters (2023). "Underground $H_2$ Storage and the Geochemical Considerations for Safety and Reliability" 2023 AEESP Research and Education Conference, June 2023 | Boston, MA.

24. L.E. Beckingham, Z. Shi, C.A. Peters (2023). "Oxidized and Reduced Sulfur in Subsurface $H_2$ Storage Formations" ACS Spring Meeting.
25. Ling, F.T., Hunter, H.A., Peters, C.A. (2022) "Nucleation, Growth, and Crystal Morphology of Sr Co-Precipitation into Barite". ***INVITED*** Geological Society of America Abstracts with Programs, vol. 54, no. 5, https://doi.org/10.1130/abs/2022AM-379611
26. Kim, J.J., Peters, C.A., Lee, S.S., Fenter, P. (2022) "Mitigating cadmium and zinc from hazardous runoff via carbonate coprecipitation" 2022 Association of Environmental Engineering and Science Professors (AEESP) Research and Education Conference, Washington University in St. Louis.
27. Ling, F.T., Hunter, H., Peters, C.A. (2022) "Modeling the nucleation, growth, and co-precipitation of Sr into barite particles" ACS Spring 2022. March 2022.
28. Kim, J.J., Peters, C.A., Lee, S.S., Fenter, P. (2022) "Stability of coprecipitated zinc and cadmium in calcium carbonate under acidic conditions" ACS Spring 2022. March 2022.
29. Kim, J.J., Peters, C.A., Lee, S.S., Fenter, P. (2021) "Trace element incorporation in calcium carbonate precipitates: Characterization using synchrotron-based x-ray diffraction, x-ray fluorescence, and transmission x-ray microscopy." H15G-1125, AGU Fall Meeting 2021.
30. C.A. Peters and J.J. Kim, "Simultaneous mitigation of greenhouse gases and heavy metal pollution with carbonate mineral precipitation" ***INVITED*** Oral Pres. at ACS Fall 2021. Atlanta GA. 2021.
31. Ling, F.T., Plattenberger, D., Clarens, A., Peters, C.A. "Modeling $CaSiO_3$-$CO_2$ reactions and permeability evolution for sealing leakages from geologic carbon storage" Oral Presentation at ACS Spring 2021. Virtual, 14, April 2021.
32. Kim, J.J., Myneni, S.C.B., Peters, C.A. "Treating mining-impacted waters for heavy metals using coprecipitation in carbonates and other mineral precipitates" (PAPER ID: 3556397). Oral Presentation at ACS Spring 2021. Virtual, 7, April 2021.
33. D.F. Levia et al. "Planetary Resilience Jeopardized by Homogenization of the Terrestrial Water Cycle" H081-04, AGU Fall Meeting 2020.
34. A. Mrad et al. "Peak Grain Forecasts in the U.S. High Plains and Withering Waters" GC066-06, AGU Fall Meeting 2020.
35. H. Deng et al. "Key controls and impacts of reaction-driven alteration of fracture-matrix interfaces" H067-01, AGU Fall Meeting 2020. ***INVITED***
36. JJ Kim, FT Ling, D Plattenberger, AF Clarens, CA Peters, "Multimineral Characterization of Shales for Reactive Transport Modeling Based on Micro-XRF Interpretations" H081-04,AGU2020FallMtg.
37. S Hajirezaie and CA Peters, "Stochastic modeling of carbonate mineral precipitation and dissolution in fractures" H067-06, AGU Fall Meeting 2020.
38. C.A. Peters and J.J. Kim, "Synchrotron-Based Machine Learning Approach for Raster (SMART) Mineral Mapping and Applications for Reactive Transport Modeling" CMWR 2020: Computational Methods in Water Resources. Stanford University 2020.
39. C.A. Peters, J.J. Kim, F.T. Ling, D.A.Plattenberger, A.F. Clarens, "Machine learning for SMART mineral mapping using coupled XRF-XRD" Goldschmidt 2020. DOI: 10.46427/gold2020.2069 ***INVITED***
40. S. Hajirezaie, C.A. Peters, "Precipitation-driven permeability reduction of an underground fracture using magnetite nanoparticles" H14I-08. 2019 AGU Fall Meeting.
41. Levia, D. et al. "Ecohydrology in the 21st Century: A Convergence of Opportunities for Global Sustainability and Social Justice and Equity" H14C-04, 2019 AGU Fall Meeting.
42. A.F. Clarens, D. Plattenberger, F.T. Ling, C.A. Peters. "Crystalline calcium silicate hydrates could enable tailored permeability control in the deep subsurface." H14I-07, 2019 AGU Fall Meeting.
43. Peters, C.A. "Subsurface Applications for Greenhouse Gas Mitigation: Seismic Detection of Geochemical Processes" ***INVITED***. ISEG 2019 The 11th International Symposium on Environmental Geochemistry, Peking University (PKU), Beijing, China, August 7th-10th, 2019.

44. Hunter, H., Ling, F.T., Peters, C.A. "Strontium Removal from Hydraulic Fracturing Wastewater through Coprecipitation with Barite ". *ASCE World Environmental & Water Resources Congress*, Pittsburgh, PA, 2019.
45. Hunter, H., Ling, F.T., Peters, C.A. "Metals Removal from Wastewater through Coprecipitation with Barite ". *AEESP Research and Education Conference*, Tempe, AZ, 2019.
46. C.A. Peters, F.T. Ling, J.J. Kim, D. Plattenberger, A.F. Clarens, "Machine Learning Application for Mapping Calcium Mineral Precipitates Using Coupled Microscale XRF and XRD" H33B-08, 2018 Fall Meeting AGU, Washington D.C.
47. D. Plattenberger, F.T. Ling, C.A. Peters, A.F. Clarens "Calcium Silicate Crystal Structure Impacts its Reactivity with $CO_2$ and Chemistry of Reaction Products" MR53A-0089, 2018 Fall Meeting AGU, Washington D.C.
48. F.T. Ling, D. Plattenberger, A.F. Clarens, C.A. Peters "A Reactive Transport Model of $CaSiO_3$ Reactions for Targeted Mineral Precipitation in Porous Media" H21N-1888, 2018 Fall Meeting AGU, Washington D.C.
49. A.F. Clarens, D. Plattenberger, Z. Tao, L. Xiaotong, C.A. Peters, J.P. Fitts, F.T. Ling "Targeted Mineral Carbonation to Enhance Wellbore Integrity" Mastering the Subsurface Through Technology Innovation, Partnerships and Collaboration: Carbon Storage and Oil and Natural Gas Technologies Review Meeting, U.S. Department of Energy NETL, August 2018 Pittsburgh, PA.
50. F.T. Ling, H. Hunter, J.P. Fitts, A. Lanzirotti, A.S. Acerbo, C.A. Peters. "Geochemical modeling of arsenic co-precipitation and compositional zonation in barite" American Chemical Society (ACS) National Meeting, GEOC Division. Boston, MA. August 2018.
51. H. Hunter, F.T. Ling, J.P. Fitts, C.A. Peters. "Strontium removal from wastewater through co-precipitation with barite" American Chemical Society (ACS) National Meeting, ENVR Division. Boston, MA. August 2018.
52. Sheets J, Hajirezaie S, Swift A, Crandall D, Cole D, Peters C, Kornacki A (2018) "Mineral Paragenesis and Microtextures in Naturally Sealed Shale Fractures" Goldschmidt Abstracts, 2018.
53. Spokas, K.; Fang, Y.; Fitts, J.P.; Peters, C.A.; Elsworth, D. "Collapse of chemically altered porous surface decreases fracture permeability, frictional strength and stability." InterPore 10th Annual Meeting and Jubilee May 14 – 17 2018, New Orleans, USA.
54. Plattenberger, D.; Ling, F.T.; Peters, C.A.; Clarens, A. "Cementing pores and fractures using mineral silicate carbonation in situ" InterPore 10th Annual Meeting and Jubilee May 14 – 17 2018, New Orleans, USA.
55. Plattenberger, D, Tao, Z, Ling, FT, Peters, CA, Clarens, AF "Pseudowollastonite Carbonation Could Enable New Frontiers in Carbon Storage" H32D-04, 2017 Fall Meeting AGU, New Orleans, LA.
56. Hajirezaie, S, Peters, CA, Swift, A., Sheets, JM, Cole, DR, Crandall, D, Cheshire, M, Stack, AG, Anovitz, LM. "Mineral Precipitation in Fractures: Multiscale Imaging and Geochemical Modeling" H43G-1726, 2017 Fall Meeting AGU, New Orleans, LA 11-15 Dec.
57. Ling, F.T., Hunter, H.A., Fitts, J.P., Lanzirotti, A., Acerbo, A.S., Peters, C.A. (2017) "Arsenic Removal from High Salinity Wastewater Through Barite Co-Precipitation". Geological Society of America 2017, GSA, Seattle, WA.
58. Spokas, K.; Fang, Y.; Elsworth, D.; Fitts, J.P.; Peters, C.A. "Reaction-induced porous fracture surfaces: Effects on fracture friction and permeability during shear" Goldschmidt 2017. Paris, France, August, 2017.
59. Hunter, H.; Ling, F.; Fitts, J.P.; Peters, C.A. "Barite Particle Precipitation Kinetics and Trace Metal Uptake". Goldschmidt 2017. Paris, France, August, 2017.
60. Ling FT, Tao Z, Plattenberger D, Fitts JP, Peters CA, Clarens A. "Wollastonite Hydration, Dissolution, and Calcite Precipitation for Targeted Mineral Carbonation" Goldschmidt 2017. Paris, France, August, 2017.

61. Spokas, K.; Peters, C.A.; Fitts, J.P. "Rock Fracture Wall Alteration due to Mineral Dissolution: Formation of a porous altered layer and its effects on fracture flow properties" 9th International Conference on Porous Media & Annual Meeting, INTERPORE 2017. Rotterdam, Netherlands.
62. Ling, F., Hunter, H., Fitts, J., Lanzirotti, A., Acerbo, A., Peters, C.A. "Geochemical modeling of arsenic incorporation during barite precipitation" 253rd American Chemical Society (ACS) National Meeting, GEOC Division, San Francisco, CA. April 2017.
63. Spokas, K. Peters, C.A., Pyrak-Nolte, L.J. (2016) Reaction-Driven Evolution of Subsurface Fracture Aperture and Permeability: Effects of Mineralogy and Confining Stress. 252nd American Chemical Society (ACS) National Meeting & Exposition, Philadelphia, United States, August 2016.
64. J. Fitts, A. Lanzirotti, A. Acerbo, C. Yong, B. Dazas, X. Huang, E. Nazaretski, G. Rogers, K. Spokas, R. Tappero, H. Yan, C. Peters (2016) Salinity effects on arsenic incorporation during barite precipitation treatment of idealized shale gas wastewaters. 252nd American Chemical Society (ACS) National Meeting & Exposition, Philadelphia, United States, August 2016.
65. Spokas, K., Peters, C.A., Pyrak-Nolte, L.J. (2016). Modeling Geomechanical Deformation in Reactive Fractures. 26th Goldschmidt Conference. Yokohama, Japan. June 26-July 1.
66. Spokas, K., Peters, C.A. (2016) Coupling Stress and Reactive Transport in Fractures: Effects of Mineralogy on the Evolution of Contacting Asperities and Fracture Permeability. XXI International Conference of Computational Methods in Water Resources. Toronto, Canada. June 20-24.
67. 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 2016 May 9-12, Cincinnati, OH, USA.
68. Spokas, K.; C. A. Peters; L.J. Pyrak-Nolte; J. Morris; J. P. Fitts; H. Deng. "Coupling stress and reactive transport in fractures: Effects on contacting asperities, permeability and stiffness." Abstract H43K-05, 2015 AGU Fall Meeting, San Francisco, CA. Dec 2015.
69. J. Fitts, K. Spokas, H. Hunter, C. Peters, "Contaminant mobilization from shale during hydrofracking and gas production", ***INVITED*** 250th ACS National Meeting, GEOC Division, Boston, MA, Aug 2015.
70. Hang Deng, Jeffrey Fitts, Catherine Peters, "Geochemical alterations of carbonate fractures", 250th ACS National Meeting, GEOC Division, Boston, MA, Aug 2015.
71. Fitts, J.P.; Hunter, H.; Spokas, K.; Peters, C. A. "Forecasting contaminant mobilization from shale into gas production wastewaters", 2015 AEESP Research and Education Conference, Yale University, June 2015.
72. Deng, H.; Fitts, J.P.; Peters, C.A. "Geochemical alterations of carbonate fractures and the environmental implications", 2015 AEESP Research and Education Conference, Yale Univ.
73. Deng, H.; Bielicki, J.M.; Oppenheimer, M.; Fitts, J.P.; Peters, C.A. "How leakage risk in geologic $CO_2$ storage might impact climate change mitigation and policy choices", 2015 AEESP Research and Education Conference, Yale University, June 2015.
74. Hang Deng, Jeffrey M. Bielicki, Michael Oppenheimer, Jeffrey P. Fitts, Catherine A. Peters (2015) "Accounting for the leakage risk of geologic $CO_2$ storage and its impacts on climate mitigation and the global energy system." Fourteenth Annual Conference on Carbon Capture, Utilization & Storage. Pittsburgh, PA.
75. C. Peters, H. Deng, B. Guo, J. Fitts. "Challenges in reactive transport modeling for prediction of geometry evolution in fractured carbonate rocks" ***INVITED*** Abstract H51R-01, 2014 AGU Fall Meeting, San Francisco, CA. Dec 2014.
76. H. Deng, J. Fitts, D. Crandall, D. McIntyre, C. Peters. "Permeability evolution of fractured limestone due to reactive flow: Observation and prediction of wormhole formation" Abstract H51B-0601, 2014 AGU Fall Meeting, San Francisco, CA. Dec 2014.

77. B. Guo, J. Fitts, C. Peters. "Development of two simplified geochemical models for permeability evolution due to calcite dissolution in preferential pathways in caprock" Abstract H41F-0897, 2014 AGU Fall Meeting, San Francisco, CA. Dec 2014.
78. C. Peters, H. Deng, J. Bielicki, J. Fitts, M. Oppenheimer. "How $CO_2$ Leakage May Impact the Role of Geologic Carbon Storage in Climate Mitigation" Abstract GC41B-0565, 2014 AGU Fall Meeting, San Francisco, CA. Dec 2014.
79. J. Bielicki, C. Peters, J. Fitts, E. Wilson. "Geologic Carbon Sequestration: Leakage Potential and Policy Implications" Abstract H51J-0740, 2014 AGU Fall Meeting, San Francisco, CA. Dec 2014.
80. J. Fitts, H. Deng, C. Peters. "How reactive fluids alter fracture walls and affect shale-matrix accessibility" Abstract H14D-06, 2014 AGU Fall Meeting, San Francisco, CA. Dec 2014.
81. Deng, H.; J.M. Bielicki; M. Oppenheimer; J.P. Fitts; C.A.Peters. "Policy implications of Monetized Leakage Risk from Geologic $CO_2$ Storage Reservoirs", International Conference on Greenhouse Gas Technologies (GHGT-12); Oral presentation. Austin, TX, October 2014. Paper number 569.
82. Peters, CA; J.P. Fitts; H. Deng. "Geochemistry Challenges in Reliable Geologic Carbon Sequestration" ***INVITED*** Keynote presentation at 100th anniversary of the Division of Environmental Chemistry, 248th American Chemical Society National Meeting, San Francisco, CA August 2014. *PAPER ID: 18241*
83. Peters, C.A. "Geochemistry of Caprock Fracture Dissolution and $CO_2$ Leakage in Geologic Carbon Sequestration" ***INVITED*** Gordon Research Conference on Environmental Sciences Water. Holderness, NH, June 2014.
84. Giammar, D.E.; Hayes, S.E.; Moore, J.; Surface, J.A.; Wang, F.; Xiong W.; Peters, C.A.; Guo, B. "Control of Mineral Carbonation of Forsterite by Diffusive Transport Processes" 13th Annual Conference on Carbon Capture Utilization & Sequestration, CCUS 2014 May, Pittsburgh PA.
85. C.A. Peters, H. Deng, B. Guo, J.P. Fitts. "Challenges for predicting permeability evolution of fractured carbonate-bearing rocks", ***INVITED***. Geochemistry Division 247th American Chemical Society National Meeting Dallas, Texas, March 16-20, 2014. *PAPER ID: 16758*.
86. W. Xiong, F. Wang, D. Giammar, B. Guo, C. Peters, A. Surface, J. Moore, S. Hayes. "Coupled Geochemical and Transport Processes in Carbonate Mineral Formation from Olivine", Geochemistry Division 247th American Chemical Society National Meeting Dallas, Texas, March 16-20, 2014.
87. 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.
88. 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.
89. 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
90. 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.
91. 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.
92. 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: Education, Research, and Practice. Colorodo School of Mines, July 2013.

93. 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.
94. J. Bielicki, J.P. Fitts, C.A. Peters, E. Wilson. "Monetizing Leakage Risk of Geologic $CO_2$ Storage using Wellbore Permeability Frequency Distributions". Geophysical Research Abstracts, Vol. 15, EGU2013-10924, 2013. EGU General Assembly 2013.
95. BR Ellis, JP Fitts, CA Peters "Mineral Spatial Heterogeneity Constrains Permeability Evolution in a Limestone Fracture" Abstract H11A-1139 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.
96. 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 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.
97. 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 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.
98. G Wang; KW Jones; W Um; ML Rockhold; LE Crandell; CA Peters; WB Lindquist, "Time-dependent Measurements of Dissolution-precipitation Reactions Caused by Caustic Waste Solutions At the Hanford Site Using Synchrotron Computed Microtomography", Abstract H52C-07 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.
99. LE Crandell; CA Peters; W Um; KW Jones; WB Lindquist, "2D imaging in a 3D world: Observing sub-grain scale variations and secondary mineral precipitates in reacted pore networks", Abstract H53G-1610 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.
100. Deng, H., Ellis, BR., Peters, C.A., "Modification of Fracture Hydraulic Properties by CO2-Acidified Brine Flow" 2012 AICHE Annual Meeting Pittsburgh, PA.
101. KW Jones, R Tappero, J Wang, Y-C Chen, Q Yuan, WB Lindquist, L Crandell, CA Peters, W Um, LA Newman, T Sabo-Atwood, C Moyer, "Tomographic Investigations Relevant to the Rhizospere", Visions for a Sustainable Planet: ASA, CSSA, and SSSA International Annual Meetings, Oct. 21-24, 2012, Cincinnati, OH.
102. Peters, C.A.; Fitts, J.P.; Celia, M.A., Kalb, P.D.; Bhatt, V.; Wilson, E.J.; Bielicki, J.M.; Pollak, M. "Basin-Scale Leakage Risks from Geologic Carbon Sequestration" U.S. DOE NETL, Developing the Technologies and Building the Infrastructure for $CO_2$ Storage. Pittsburgh Aug 2012.
103. 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)
104. 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.
105. Bielicki, J., Pollak, M., Wilson, E., Fitts J., Peters C., (2012). "Your View or Mine: Spatially Quantifying $CO_2$ Storage Risk from Various Stakeholder Perspectives." *11th Annual Conference on Carbon Capture Utilization & Sequestration*, April 30 - May 3, 2012, Pittsburgh, PA. Poster Presentation.
106. L.E. Crandell, C.A. Peters, W. Um, W.B. Lindquist, "Intragranular Porosity in Hanford Sediment: Quantification and Implications for Radionuclide Trapping"; 243rd ACS National Meeting and Exposition, San Diego, California, March 25 - 29, 2012.

107. WB Lindquist, D Kim, C Peters (2012) "Up-scaling Reaction Rates from Pore to Core Scale", International Conference on Flow and Transport in Porous Media, Poros, Greece.
108. L.E. Crandell; C.A. Peters; Wooyong Um; Keith W. Jones; W B. Lindquist (2011), "Intragranular porosity in Hanford sand grains after reaction with caustic tank wastes: Quantification and implications for reactive transport", Abstract H23C-1265 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.
109. Curtis M. Oldenburg; Christine Doughty; Catherine A. Peters; Patrick F. Dobson (2011), The Impact of Boundary Conditions on Long-Column Flow Experiments Related to Geologic CO2 Storage (***INVITED***), Abstract GC42A-02 presented at 2011 Fall Meeting, AGU, San Francisco, CA.
110. B.R. Ellis; C.A. Peters; J.P. Fitts; J.P. Nogues; M.A. Celia; M. Dobossy; A. Janzen (2011), Alteration of Caprock Fracture Geometries During Flow of CO2-acidified Brine: Informing Basin-scale Leakage Models From Pore-scale modeling and Core-scale Experiments, Abstract GC42A-08 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.
111. Jeffrey M. Bielicki; Melisa Pollak; Elizabeth Wilson; Thomas R. Elliot; Bin Guo; Juan P. Nogues; Catherine A. Peters (2011), Your View or Mine: Spatially Quantifying CO2 Storage Risk from Various Stakeholder Perspectives, Abstract H42C-08 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.
112. Hang Deng; Dustin Crandall; Seth King; Brian R. Ellis; Grant S. Bromhal; Jeffrey P. Fitts; Catherine A. Peters (2011), Change in fracture permeability after the flow-through of CO2-acidified brine, Abstract GC51A-0935 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.
113. W B. Lindquist; D. Kim; C.A. Peters (2011), Dependence of Up-Scaled Reaction Rate on Flow Rate in Porous Media, Abstract GC51A-0939 presented at 2011 Fall Meeting, AGU, San Francisco, CA.
114. Juan P. Nogues; Catherine A. Peters; Jeffrey P. Fitts; Michael A. Celia (2011), Investigation of dissolution and precipitation of carbonate rocks using reactive transport modeling in pore networks, Abstract GC51A-0940 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.
115. B. Guo; E.N. Matteo; T.R. Elliot; J.P. Nogues; H. Deng; J.P. Fitts; M. Pollak; J. Bielicki; E. Wilson; M.A. Celia; C.A. Peters (2011), Semi-analytical estimation of wellbore leakage risk during $CO_2$ sequestration in Ottawa County, Michigan, Abstract GC51A-0948, 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.
116. C.A. Peters; L.E. Crandell; W. Um; K.W. Jones; W.B. Lindquist (2011), The 2D versus 3D imaging trade-off: The impact of over- or under-estimating small throats for simulating permeability in porous media, Abstract H53N-02 presented at 2011 Fall Meeting, AGU, San Francisco, Calif.
117. Huang T., Krupka M., Bagrianski S., Wagner S., Peters C., Adriaenssens S. (2011). 'Shaping mechanically coupled assemblies of dielectric elastomer elements'. 2011 Materials Research Society Fall Meeting, Boston.
118. C. A. Peters, A. F. Clarens, J. P. Fitts, C. M. Oldenburg, P. F. Dobson, J. S.Y.Wang, Y. Guglielmi, B. R. Ellis, S. Wang. "Safe and effective geologic sequestration of CO2: Partnerships for multi-scale experimental studies", Oral presentation at *Global Sustainability and Environmental Engineering: AEESP 2011 Conference*. Univ. of South FL, July 2011, Tampa, FL.
119. L. Crandell, C. A. Peters, W. Um, K. Jones, B. Lindquist. "Changes in the pore network structure of Hanford sand after reaction with caustic tank wastes." Poster presentation at *Global Sustainability and Environmental Engineering: AEESP 2011 Conference*. Univ. of South FL, July 2011.
120. B.R. Ellis, C.A. Peters, J.P. Fitts, G. Bromhal, D. McIntyre, B. Warzinski. "Investigation of caprock fracture evolution after $CO_2$-brine flow." Poster presentation at Global Sustainability and Environmental Engineering: AEESP 2011 Conference. Univ. of South FL, July 2011, Tampa, FL.
121. Ellis, B.R., Peters, C.A., Fitts, J.P., Bromhal, G.S., McIntyre, D.L., Warzinski, R.P. (2011), "Geochemical alteration of fracture geometry during leakage of CO2". Oral presentation at the 2011 Goldschmidt Conference, Prague, Czech Republic. Mineralogical Magazine, Vol. 75 (3), pg. 806.

122. E. Wilson, M. Pollak, J. Belicki, C. Peters, M. Celia, J. Fitts, V. Bhatt. "Integrating Geologic Storage of Carbon Dioxide with Other Subsurface Activities", Tenth Annual Conference on Carbon Capture & Sequestration, Pittsburgh, PA, May 2-5, 2011.
123. B.R. Ellis, C.A. Peters, J.P. Fitts, G. Bromhal, D. McIntyre, B. Warzinski. "Investigation of caprock fracture evolution after $CO_2$-brine flow", Oral presentation at *Tenth Annual Conference on Carbon Capture & Sequestration*, May 2011, Pittsburgh, PA.
124. C.M. Oldenburg, C. Doughty, P.F. Dobson, C.A. Peters, Y.B. Altundas, N. Chugunov, E. Stabinski, T.S. Ramakrishnan, S. Verma. "Simulations for design of very large-scale laboratory experiments of upward $CO_2$ flow with geophysical imaging", Poster presentation at Tenth Annual Conference on Carbon Capture & Sequestration, May 2011, Pittsburgh, PA.
125. LE Crandell, CA Peters, W Um, WB Lindquist. 2010. Sub-grain scale mineralogy of Hanford sand after reaction with caustic tank wastes. *Abstract H41D-1108 2010 Fall Meeting, AGU, San Francisco, CA.*
126. H Deng, CA Peters, JP Fitts, M Pollak, E Wilson, 2010. Hydrogeological characterization of a potential $CO_2$ injection site in Ottawa County, Michigan. *Abstract H53E-1080 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.*
127. C.M. Oldenburg; C.A. Peters; P.F. Dobson; C. Doughty. 2010. Upward flow of supercritical $CO_2$ with transition to gaseous conditions: Simulations for design of large-scale $CO_2$ flow experiments at LUCI. *Abstract H11M-05 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.*
128. B.R. Ellis, J.P. Fitts, G. Brohmal, D. McIntyre, R. Warzinski, E. Rosenbaum, C. A. Peters. 2010. "Computed Tomography Analysis of Alterations in Fractured Caprock Resulting from $CO_2$-acidified Brine", GSA 2010 Annual Meeting, Denver, Colorado. Oct 31 – Nov 3, 2010. *GSA Abstracts with Programs* Vol. 42, No. 5
129. Ellis, B.R.; Hui, W.C.E.; Peters, C.A. Fitts, J.P.; Bhatt, V. 2010 "Potential benefits of retrofitting power plants with combined $CO_2$-$SO_2$ emission control for co-injection in geologic carbon sequestration", *9th Annual Conference on Carbon Capture & Sequestration*, May 10-13, 2010.
130. Dobson, P.F.; Peters, C.A.; Ramakrishnan, T.S.; Stabinski, E.; Liang, K; Verma, S.; Oldenburg, C.M.; Freifeld, B.M.; and Wang, J.S.Y. 2010. Monitoring fluid concentration and phase changes in flow experiments at the proposed DUSEL $CO_2$ facility. GSA Rocky Mountain - 62nd Annual Meeting (21-23 April 2010). *Geological Society of America Abstracts,* Vol. 42, No. 3, p. 7.
131. C.A. Peters; C.M. Oldenburg; P.F. Dobson; B.M. Freifeld; J.S.Y Wang; G. Scherer; T.C. Onstott. 2010. "DUSEL $CO_2$: A facility for experimental study of geologic carbon sequestration", 239th *ACS National Meeting*, March 21-25, 2010, San Francisco, CA. ***INVITED.***
132. C.A. Peters; P.F. Dobson; C.M. Oldenburg; G. Scherer; T.C. Onstott; J.T. Birkholzer; B.M. Freifeld; M.A. Celia; J.S. Wang; J. Prevost. 2009. "DUSEL $CO_2$: A deep underground laboratory for geologic carbon sequestration studies", *Eos Trans. AGU*, Fall Meet. Suppl., Abstract H23E-0993.
133. T.C. Onstott; C.A. Peters; L.C. Murdoch; D. Elsworth; E.L. Sonnenthal; T. Kieft; D.F. Boutt; L. Germanovich; S.D. Glaser; H.F. Wang; B. Roggenthen; K. Lesko; P. Cushman; L.D. Stetler; S. Bang; C. Anderson. 2009. "DUSEL and the future of deep terrestrial microbiology", *Eos Trans. AGU*, Fall Meet. Suppl. Abstract B21D-02.
134. Groff, K.M., and C.A. Peters. 2009. "Sandstone mineral accessibility for acid-driven reactions via BSE-EDX imaging." Geochemica et Cosmochimica Acta 73(13): A468-A468.
135. Ellis, B R, L E Crandell, C A Peters, 2008. "Co-injection of $SO_2$ With $CO_2$ in Geological Sequestration: Potential for Acidification of Formation Brines", *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract H23D-0989.
136. Crandell, L E, B R Ellis, C A Peters, 2008. "Solubility and Diffusivity of $SO_2$ for Co-injection with $CO_2$ in Geological Sequestration", *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract H23D-0995.

137. Crandell, L.E., B. R. Ellis, J. Cheung, C. A. Peters. “Injection of $CO_2$ and co-contaminant gases: Are separation costs justifiable?”, Seventh Annual Conference on Carbon Capture & Sequestration, Pittsburgh, PA. May 2008.
138. Peters, C. A.; W. B. Lindquist; M. A. Celia. 2008. “Up-Scaling Mineral Accessibility and Pore Networks for $CO_2$ Reactive Transport in Sandstones”. Geosciences Research Symposium: Basic Research Relevant to $CO_2$ Sequestration”, Gaithersburg, MD, March 2008. Organized by Nick Woodward, Office of BES, U.S. DOE.
139. Ellis, B. R., Peters, C. A., Buschkuehle, M. 2007. “Formation Buffering Potential Pertaining to Geological Storage of Carbon Dioxide”, EOS Trans. AGU, 88(52) Fall Meet. Suppl. Abstract U43C-1378.
140. B.R. Ellis; K.M. Bowman; C.A. Peters; M. Buschkuehle. "Consideration of formation buffering potential and reactive mineral availability pertaining to geological storage of carbon dioxide" Goldschmidt 2007. GCA 71 (15): A255-A255 Suppl. S, AUG 2007
141. D. Kavetski; C.A. Peters; M.A. Celia; B. Lindquist. 2007. "Upscaling reaction rate laws in geochemical reactive transport using pore-scale network models" Goldschmidt 2007. GEOCHIMICA ET COSMOCHIMICA ACTA 71 (15): A255-A255 Suppl. S, AUG 2007
142. C. A. Peters, K. Bowman, B. Ellis. 2007. “Imaging Viking Sandstones for Quantification of Reactive Minerals and Surfaces”, 2007 AEESP Conference: Interactions at the Interface – Making the Connections Between Environments, Disciplines and Nations, Virgina Tech.
143. Sujata Ray and Catherine A. Peters, Impact of chemical stress on bacterial metabolism, Paper #42726, ACS Middle Atlantic Regional Meeting (MARM, 2007) .
144. Peters, C. A.; Maier, M. L.; Celia, M. A.; Kim, D.; Lindquist, W. B. 2007. “Network and Mineral Characterization of Viking Sandstones for Reactive Transport Modeling”. Computational and Numerical Geosciences, Gaithersburg, MD, May 2007. Nick Woodward, Office of BES, U.S. DOE.
145. Peters, C. A. and Maier, M. L. 2006, Backscatter Electron Imaging of Viking Sandstones for Mapping Reactive Minerals, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract H54D-07
146. Ray, S. and C. A. Peters. 2006. “Quantifying effects of chemical stress on microbial metabolism”, 2006 Northeast Regional ACS meeting (NERM 2006), Binghamton, NY. Oct 5-7, 2006.
147. L. Li, C. A. Peters, M. A. Celia. 2005. “Scaling of geochemical reaction kinetics in heterogeneous porous media using pore-scale network modeling” American Geophysical Union 2005 Fall Meeting, San Francisco. EOS Trans. AGU 86(52), Fall Meeting Supplement, Abstract B32B-04.
148. C. A. Peters and L. Li. 2005. “Mineral Reactions in Geological $CO_2$ Sequestration: Fast, Slow, and Forget About It!” 2005 AEESP Research & Education Conference, Clarkson University.
149. Parkin, R.; Ragain, L. J.; Peters, C.; Thorne, S.; Butte, G. 2004. “Strategic Risk Communication: Emerging Contaminants” AWWA Source Water Symposium. Palm Beach, FL, January 2005.
150. Li, L., C. A. Peters and M. A. Celia. 2004. "Network modeling of anorthite and kaolinite reactions rates in heterogeneous porous media." American Geophysical Union 2004 Fall Meeting, San Francisco, December 13-17, Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract H33F-0537.
151. Parkin, R.; Ragain, L. J.; Peters, C.; Thorne, S.; Butte, G. 2004. “Strategic preparation for emerging drinking water contaminants”. American Public Health Association. 132nd Annual Meeting.
152. Li, L., C. A. Peters and M. A. Celia. 2004. "Effects of pore-scale heterogeneities on continuum-scale rates of reactions associated with anorthite dissolution." Geological Society of America Annual Meeting, Denver, November 7 - 10, 2004, Abstract 168-2.
153. Parkin, R.; Ragain, L. J.; Peters, C.; Thorne, S.; Butte, G. 2004. “Strategic Risk Communication: Addressing Emerging Drinking Water Contaminants” 2004 Water Quality Conference. Ontario, CA; October 2004.

154. Parkin, R.; Ragain, L. J.; Peters, C.; Thorne, S.; Butte, G. 2004. "Strategic Risk Communication: Emerging Drinking Water Contaminants", Environmental Health Conference of the Association of Schools of Public Health, Minneapolis, MN, July 11-13, 2004.
155. Bruant, R G; Giammar, D E; Peters, C A. 2003. "Effects of pressure and solution composition on mineral weathering rates as applied to geologic storage of carbon dioxide". American Geophysical Union 2003 Fall Meeting, San Francisco, CA. *Eos Trans. AGU, 84*(46), Fall Meet. Suppl., Abstract B21D-0736, 2003
156. Parkin, R.; Peters, C.; Ragain, L. "Strategic Anticipation of Drinking Water Contaminants". Society of Risk Analysis, SRA 2003 Annual Meeting, December 2003. Baltimore, MD.
157. Li, L.; Peters, C. A.; Celia, M. A. 2002. "Upscaling of Carbonate Dissolution Rates in Porous Media Using Pore-Scale Network Modeling". American Geophysical Union 2002 Fall Meeting, San Francisco, CA. Eos. Trans. AGU, 83(47), Fall Meeting Suppl., Abstract H62G-09.
158. Giammar, D. E.; Bruant, R. G. Jr.; Peters, C. A. 2002. "Silicate weathering at pressure, temperature, and aqueous carbon dioxide conditions relevant to geologic carbon sequestration". Abstracts of the Geological Society of America Annual Meeting, Vol. 34, No. 6, pp. 135-6, October 27-30, 2002, Denver, Colorado.
159. Peters, C. A.; Celia, M. A.; Jaffe, P. R.; Bruant, R. G., Jr.; Giammar, D.E. 2002. "Geologic Storage of $CO_2$ in Deep Saline Aquifers" (abstract OR4-11) AEESP/AAEE Conference 2002, Integrated Environmental Teaching, Research and Practice: Linking Engineering and Science to Address Complex Problems, August 10-14, 2002, University of Toronto, Toronto, Canada.
160. Wammer, K. H.; Peters, C. A. 2002. "The Role of Molecular Structure in Determining Polycyclic Aromatic Hydrocarbon Biodegradation Rates", AEESP/AAEE Conference 2002, Integrated Environmental Teaching, Research and Practice: Linking Engineering and Science to Address Complex Problems, August 10-14, 2002, University of Toronto, Toronto, Canada.
161. Wammer, K. H.; Peters, C. A. 2002. "The Role of Molecular Structure in Determining Polycyclic Aromatic Hydrocarbon Biodegradation Rates", Poster at the Gordon Research Conference on Environmental Sciences: Water, June 2002, Plymouth, NH.
162. Celia, M. A.; Peters, C. A.; Bachu, S. 2002. "Geologic Storage of $CO_2$: Leakage Pathways and Environmental Risks". (Invited) American Geophysical Union 2002 Spring Meeting, Washington, D.C., Eos. Trans. AGU, 83(19), Spring Meet. Suppl., Abstract GC32A-03. ***INVITED***
163. Wammer, K. H.; Peters, C. A. 2002. "The Role of Molecular Structure in Determining Polycyclic Aromatic Hydrocarbon Biodegradation Rates", QSAR 2002: 10th International Workshop on Quantitative Structure Activity Relationships in Environmental Sciences. Chateau Laurier, Ottawa, Canada, 25-29 May, 2002.
164. Wammer, K. H.; Peters, C. A. 2002. "The Role of Molecular Structure in Determining Polycyclic Aromatic Hydrocarbon Biodegradation Rates", Challenges in Environmental Risk Assessment and Modelling: Linking Basic & Applied Research. SETAC Europe 12th Annual Meeting May 2002, Vienna, Austria.
165. Giammar, D.E., Myneni, S.C.B., Bruant Jr., R.B., and Peters, C.A. "Characterization of mineral surfaces weathered under high pressure and carbon dioxide conditions", Abstracts of Papers of the American Chemical Society, 223: 134-GEOC Part 1. April 7, 2002.
166. Wang, S., P.R. Jaffe, M.A. Celia, S.C. Myneni, C.A. Peters, and J.H. Prevost, "Effect of $CO_2$ releases from deep reservoirs on the quality of fresh-water aquifers", 2001 AAPG Annual Convention, Denver, CO, Jun. 3-6, 2001.
167. Bruant, R. G., Jr.; Held, R. J.; Peters, C. A.; Celia, M. A. "Pore-Scale Network Simulation of Single- and Multi-Component Non-Aqueous Phase Liquid (NAPL) Dissolution". American Geophysical Union 2001 Spring Meeting, Boston, MA. EOS Trans. AGU, 82(20), Spring Meeting Suppl., p. S176, 2001.

168. Bruant, R. G., Jr.; Held, R. J.; Peters, C. A.; Celia, M. A. “Pore-Scale Network Simulation of Single- and Multi-Component Non-Aqueous Phase Liquid (NAPL) Dissolution”. Presented at the 2001 12th ACBM/NIST Computer Modeling Workshop, June 11-14, National Institute of Standards & Technology, Gaithersburg, MD.
169. Li, L., C. A. Peters, J. J. Kukor, “Modeling microbial community dynamics of bacteria biodegrading toluene and benzene”. 2001 Conference on Environmental Research, Great Plains/Rocky Mountain Hazardous Substance Research Center, Kansas State University, May 21-24, 2001.
170. Wammer, K. H., C. A. Peters. "Molecular Descriptors for Prediction of Polycyclic Aromatic Hydrocarbon Biodegradation Kinetics". Poster at the Ninth International Workshop on Quantitative Structure Activity Relationships in Environmental Sciences (QSAR2000), SETAC, September 2000, Dunes, Bourgas, Bulgaria.
171. Knightes, C. D., C. A. Peters. " Substrate Interactions in the Biodegradation Kinetics of PAH Mixtures ". Poster at the Gordon Research Conference on Environmental Sciences: Water, June 2000, Plymouth, NH.
172. Knightes, C. D.; C. A. Peters. "Modeling Multi-Substrate Biodegradation Kinetics of PAH Mixtures". Hazardous Waste Research 2000 Conference. Denver, CO. May 23, 2000. Great Plains/Rocky Mtn. HSRC.
173. Lee, K. Y.; C. A. Peters. "UNIFAC Modeling of Cosolvent Phase Partitioning in NAPL-water Systems" 1999. American Geophysical Union 1999 Fall Meeting. EOS Transactions. #H11.
174. Peters, C. A. "Compositional Changes and Solidification in PAH-Containing NAPLs", ***INVITED*** Topical Session: Subsurface Transport and Remediation of NAPL Contaminants in Multicomponent Systems, Geological Society of America Meeting, Denver, CO. GSA Abstracts, Vol. 31, No. 7, October 1999.
175. Peters, C. A. "Long-Term Composition Dynamics of PAH-Containing NAPLs and Implications for Risk Assessment", 1999. Conference on Hazardous Waste Research, St. Louis, MO. May, 1999.
176. Peters, C. A.; L. A. Ferrand. 1999. "Modeling the Relationships Between Interfacial Properties and Solution Chemistry for Non-Aqueous Phase Liquid Contaminants". European Geophysical Society Meeting, den Haag, Netherlands, April 1999.
177. Ramachandran, S.; C. A. Peters. 1998. "Kinetics of Solidification of PAH-Containing NAPLs". American Geophysical Union 1998 Fall Meeting. EOS Trans Vol. 79, No. 45, #H31A-04 p. F330.
178. Furnans, J. E., S. E. Powers, C. A. Peters. 1998. "The Wettability of Various Minerals Exposed to Nonaqueous Phase Liquids". American Geophysical Union 1998 Fall Meeting. EOS Transactions Vol. 79, No. 45, #H72A-04 p. F251.
179. Hansen, K. M., C. D. Knightes, C. A. Peters. 1998. "Multicomponent NAPL Solidification Thermodynamics". Poster at the 21st Midwest Environmental Chemistry Workshop, EWRE Univ. of Michigan. Ann Arbor, MI.
180. Knightes, C. D. and C. A. Peters. 1998. "Modeling the Kinetics of Polycyclic Aromatic Hydrocarbon Biodegradation". Poster at the Gordon Research Conference on Environmental Sciences: Water, June 1998, Henniker, NH.
181. Peters, C. A. and C. D. Knightes. 1997. "Solidification of PAH-Containing Multicomponent NAPLs", American Geophysical Union 1997 Fall Meeting. EOS Transactions Vol. 78, No. 46, #H31G-3 p. F260.
182. Guha, S., P. R. Jaffe, C. A. Peters. 1997. "Bioavailability of PAH Mixture Solubilized in Triton X100 Micelles", ACS Special Symposium on Emerging Technologies in Hazardous Waste Management IX, Sept. 1997. Pittsburgh, PA.
183. Peters, C. A. and J. Fan. 1997. "Multisubstrate Biodegradation and Bioavailability of PAHs". In Situ and On-Site Bioremediation, Fourth International Symposium. Battelle Press, Columbus, OH. 1997. Volume 2, p. 193.

184. Guha, S., P. R. Jaffe, C. A. Peters. 1997. "Biodegradation of a PAH Mixture in the Presence of Triton X100". In Situ and On-Site Bioremediation, The Fourth International Symposium. Battelle Press, Columbus, OH. 1997. Volume 2, p. 557.
185. Weber, W. J., Jr., S. Mukherji, C. A. Peters. 1996. "Aqueous Dissolution of the Constituents of Composite NAPLs". Workshop on Oil Spills in Terrestrial and Marine Environments, Haifa, Israel, May 1996.
186. Mukherji, S., C. A. Peters, W. J. Weber, Jr. 1995. "Mass Transfer of Polynuclear Aromatic Hydrocarbons (PAHs) from Complex Multicomponent Non-Aqueous Phase Liquids (NAPLs)", 18th Midwest Environmental Chemistry Workshop, Michigan State Univ., E. Lansing, MI, Oct 1995.
187. Peters, C. A. 1995. "UNIFAC Phase Equilibrium Modeling to Assess the Bioavailability of Multicomponent NAPLs Containing Polycyclic Aromatic Hydrocarbons". U.S. EPA Symposium on Bioremediation of Hazardous Wastes: Research, Development, and Field Evaluations, EPA/600/R-95/076, p. 124. Aug. 1995, Rye Brook, NY.
188. Peters, C. A. 1995. "UNIFAC Phase Equilibrium Modeling of Multicomponent NAPLs Containing Polycyclic Aromatic Hydrocarbons". Poster presentation at the U.S. EPA Hazardous Substances Research Centers, 1995 Five Centers' Research Conference: From the Flask to the Field: Moving Research Insights into Practical Solutions, July 1995, Gleneden Beach, OR.
189. Mukherji, S., C. A. Peters, W. J. Weber, Jr. 1994. "Phase Equilibria of Complex NAPL Mixtures: Theoretical Treatment and Experimental Evaluation", 17th Midwest Environmental Chemistry Workshop, Michigan State University, E. Lansing, MI, Oct. 1994.
190. Peters, C. A., S. Mukherji, W. J. Weber, Jr. 1994. "Phase Equilibria of Complex NAPL Mixtures: Experimental Evaluation and UNIFAC Modeling", Poster at the Gordon Research Conference, Environmental Sciences: Water, Jun. 1994, New Hampton, NH.
191. Peters, C. A. 1993. "A Methodology for Statistically-Based Clean-Up Standards for Complex Mixture NAPL Wastes". Water Environment Federation Specialty Conference: Developing Cleanup Standards for Contaminated Soil, Sediment, & Groundwater -- How Clean is Clean? Jan. 1993, Washington, D.C.
192. Peters, C. A. and R. G. Luthy. 1991. "Coal Tar Dissolution in Water-Miscible Solvents". Water Pollution Control Federation 64th Annual Conference, October 1991, Toronto, Ontario.
193. Peters, C. A. and R. G. Luthy. 1990. "In Situ Solvent Extraction for Remediation of Coal Tar Sites". Poster presentation at the Gordon Research Conference, Environmental Sciences: Water, Jun. 1990, New Hampton, NH.

## CONFERENCE PAPERS IN PUBLISHED PROCEEDINGS:

1. Kim, J.J., Myneni, S.C.B., Peters, C.A. “Distribution of Metals and Toxic Elements Between Carbonate, Sulfate, and Oxide Mineral Precipitates”. Eds: Stanley, P.; Wolkersdorfer, Ch.; Wolkersdorfer, K. IMWA. pp. 249-254. Newport, ICC Wales, United Kingdom, 12-16, July 2021.
2. K. Spokas and C. Peters “Geologic Carbon Storage and Leakage Risks”, Engineering Sustainability 2017: Innovation and the Triple Bottom Line. Pittsburgh, PA, April 2017.
3. H. Hunter, C. Peters “Geochemical Modeling of Arsenic Incorporation into Barite Solid Solution” Engineering Sustainability 2017: Innovation and the Triple Bottom Line. Pittsburgh, PA, April 2017.
4. C. Peters. “Environmental Geochemistry Perspectives on Subsurface Energy Technologies” (***INVITED***) Engineering Sustainability 2017: Innovation and the Triple Bottom Line. Pittsburgh, PA, April 2017.
5. H. Deng, J.P. Fitts, C.A. Peters, L. Li, D. Crandall, G. Bromhal. “Experimental study of reactive flow in an Eau Claire fracture exposed to $CO_2$-rich brine” ARMA 13-592. American Rock Mechanics Association, 47th US Rock Mechanics / Geomechanics Symposium, June 2013. Vol. 13, p. 592.

6. J.M. Bielicki, M. F. Pollak, C. A. Peters, E. J. Wilson. “CCS in a hot, crowded world: Integrating subsurface management”, 2012 APPAM Fall Research Conference: Policy Analysis & Public Management in an Age of Scarcity: The Challenges of Assessing Effectiveness & Efficiency, November, 2012. Archived at http://appam.confex.com/appam/2012/.
7. C.M. Oldenburg, C. Doughty, C.A. Peters, P.F. Dobson. “Simulations of Upward Leakage of $CO_2$ in Long-Column Flow Experiments: Effect of Lateral Boundary Condition.” Proc., TOUGH Symposium 2012, Lawrence Berkeley National Laboratory, Berkeley, California, Sept, 2012.
8. J. P. Nogues, M. A. Celia, C. A. Peters. “Pore Network Model Development to Study Dissolution and Precipitation of Carbonates”, XIX International Conference on Water Resources CMWR 2012, June 17-22, 2012. Archived online at http://cmwr2012.cee.illinois.edu/SubsurfaceBiogeochemReactiveTrans%28Proceedings%29.html
9. J.P. Fitts, B.R. Ellis, H. Deng, C. A. Peters. “Geochemical controls on fracture evolution in carbon sequestration” ARMA 12-549. American Rock Mechanics Association, 46th US Rock Mechanics / Geomechanics Symposium, Chicago IL June 2012. Vol. 12, p 549. 2012.
10. C.A. Peters, P.F. Dobson, C.M. Oldenburg, J.S.Y. Wang, B.M. Freifeld, T.C. Onstott, G.W. Scherer. "LUCI: A facility at DUSEL for large-scale experimental study of geologic carbon sequestration.” NSF CMMI Research and Innovation Conference 2011. Atlanta, GA Jan 4-7, 2011.
11. S. Ray and C. A. Peters. 2007. “Microbial Responses and Adaptation to Chemical Stress”, Abstracts of the American Chemical Society. 234th ACS National Meeting, Boston, MA, August 2007.
12. Peters, C. A., J. A. Lewandowski, M. L. Maier, M. A. Celia, L. Li. 2006. Mineral Grain Spatial Patterns and Reaction Rate Up-Scaling. Proceedings of the XVI International Conference on Computational Methods in Water Resources, edited by P. J. Binning, P. K. Engesgaard, H. K. Dahle, G. F. Pinder and W. G. Gray. Copenhagen, Denmark, June, 2006. Permanently archived at http://proceedings.cmwr-xvi.org. DOI (Metadata): 10.4122/1.1000000299 . DOI (Full text): 10.4122/1.1000000300.
13. Li, L., C. A. Peters and M. A. Celia. 2005. "Scaling of reaction rate laws in heterogeneous porous media: An investigation of anorthite and kaolinite reaction rates using network modeling." Abstracts of Papers of the American Chemical Society 229: U892-U893. 068-GEOC Part 1 MAR 13 2005.
14. K. H. Wammer and C. A. Peters, 2004. “Theoretical Analysis of the Effects of Enzyme/Substrate Interactions on Polycyclic Aromatic Hydrocarbon Biodegradation by Naphthalene Dioxygenase.” American Chemical Society. August 2004. 44(2):722-725
15. R. G. Bruant Jr.; D. E. Giammar; S. C. B. Myneni; C. A. Peters, 2003 “Effect of pressure, temperature, and aqueous carbon dioxide concentration on mineral weathering as applied to geologic storage of carbon dioxide.” In *Greenhouse Gas Control Technologies: Proc. 6th International Conference on Greenhouse Gas Control Technologies*. Gale, J. and Kaya, Y. (eds.), Elsevier: Amsterdam, Vol. 2, 1609-1612, 2003.
16. Lee, K. Y.; C. A. Peters. 2002. “Cosolvent Phase Partitioning and Interfacial Tension Estimation for Two-Phase NAPL-Water Systems”. Proc. International Conference Protection and Restoration of the Environment VI. July 1-5, 2002, Skiathos, Greece, Eds: A. G. Kungolos, et al. pp. 603-608.
17. Bruant, R. G., Jr.; Held, R. J.; Peters, C. A.; Celia, M. A. 2001. “Simulation of Multicomponent Non-Aqueous Phase Liquid (NAPL) Dissolution Using a Pore-Scale Network Model”, Proc. Intl. Symposium on Environ. Hydraul., Eds. D. Boyer; R. Rankin, Arizona State Univ., Tempe, AZ. p. 28.
18. Knightes, C. D., C. A. Peters. 2000. “Substrate Interactions in the Biodegradation Kinetics of PAH Mixtures.” Abstracts American Chemical Society 220: 367-ENVR, Part 1 AUG 20 2000.
19. Knightes, C. D., C. A. Peters. 1999. "Measurement and Comparison of Monod Biodegradation Parameters of PAHs". In: A. Leeson and B.C. Alleman (Eds.), Bioremediation Technologies for Polycyclic Aromatic Hydrocarbon Compounds. Battelle Press, Columbus, OH. pp. 173-178.
20. Hansen, K. M., C. D. Knightes, C. A. Peters. 1998. "Multicomponent NAPL Solidification Thermodynamics". Proc. 1998 Symposium on Environmental Models and Experiments Envisioning

Tomorrow (EnviroMEET'98): Behavior and Remediation of Nonaqueous Phase Contaminants in the Subsurface. July 20-23, 1998. Irvine, CA. pp. 113-124.

21. Peters, C. A., E. D. Blackburn, M. A. Celia. 1998. "Spatial and Temporal Variation of Composition in Multicomponent NAPLs". Computational Methods in Water Resources XII. Eds. V. N. Burganos, G. P. Karatzas, A. C. Payatakes, C. A. Brebbia, W. G. Gray, G. F. Pinder. Computational Mechanics Publications, June 1998. Vol 1, pp. 191-198.
22. Knightes, C. D. and C. A. Peters. 1996. "Numerical Simulation of Multicomponent NAPL Dissolution and Precipitation". WEFTEC'96, Proc. Water Environment Federation 69th Annual Conference, Dallas, TX, Oct 5-9, 1996. Vol. I, Part I: Wastewater Treatment Research, pp. 333-343.
23. Peters, C. A. 1995. "A Stochastic Model of NAPL Composition Dynamics and Relative Risk Reduction Due to Solvent Extraction". WEFTEC'95, Proc. Water Environment Federation 68th Annual Conference, Miami Beach, FL, Oct. 1995. Volume II, Part II: Remediation of Soil and Groundwater, pp. 651-660.
24. Peters, C. A. 1995. "Water-Miscible Solvents for Dissolution of Coal Tar Contaminants", Extraction in Environmental Applications session, Paper no. 42e, AIChE Summer National Meeting, Jul 30 - Aug 2, 1995. Boston, MA.
25. Small, M. J. and C. A. Peters. 1987. "Quantitative framework for assessing indoor radon policy". Proc. ASCE Annual Conference on Environmental Engineering, Lake Buena Vista, FL, pp. 300-307.
26. Borrazzo, J. E., C. A. Peters, S. Peck, C.I. Davidson. 1987. "Determination of $NO_2$ loss rates from concentration measurements in an occupied urban residence". Proc. of the 4th International Conf. on Indoor Air Quality and Climate, Vol. 1, Berlin (West), pp. 321-325.

## MENTORING OF GRADUATE STUDENTS AND POSTDOCS

| | **Degree or appointment** | **Graduation year, or term** | **Current position** |
|---|---|---|---|
| Luis Eguiguren | PhD | [future] | PhD student |
| Lauren Pincus | Postdoc | 2023-24 | Assistant Prof. GWU |
| Hamed M. Kermani | PhD | 2025 | Visiting PhD student 2024 |
| Jun Hu | PhD | [future] | PhD student |
| Conghao Yi | PhD | [future] | PhD student |
| Ruijie Tang | MS | 2024 | unknown |
| Julie Kim | PhD | 2023 | LG Chemical, Korea |
| Sassan Hajirezaie | PhD | 2022 | Employed in industry |
| Zahra Bajalan | MSE | 2021 | PhD student, UT Austin |
| Heather Hunter | PhD | 2020 | National Energy Technology Lab, DOE, Pittsburgh PA |
| Kasparas Spokas | PhD | 2019 | The Brattle Group, Washington DC |
| Florence Ling | Postdoc | 2016-18 | Associate Professor, Environmental Science, La Salle University |
| Jeffrey P. Fitts | Research scientist | 2012-17 | Columbia University |
| Bin Guo | PhD | 2015 | ExxonMobil Upstream Research Company, Houston TX |
| Hang Deng | PhD | 2015 | Assistant Prof. Peking University |
| Zhongxuan Jia | MSE | 2013 | Wells Fargo |
| Lauren (Crandell) Beckingham | PhD | 2012 | Associate Professor, Auburn University |
| Brian Ellis | PhD | 2012 | Associate Professor, University of |

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|---|---|---|---|
| | | | Michigan |
| Juan Nogues | PhD | 2012 | Professor, Universidad Paraguayo Alemana |
| Junfeng Qin | Postdoc | 2010-11 | Georg-August-Universitat Gottingen, Germany |
| Megan Fuller | Postdoc | 2010 | Professor of Chemistry, Community College of Philadelphia |
| Kimberley (Bowman) Groff | MSE | 2008 | ENVIRON, Titusville, NJ |
| Sujata Ray | PhD | 2007 | Professor, Indian Institute of Science Education and Research Kolkata |
| Dmitri Kavetski | Postdoc | 2004-07 | Professor, University of Adelaide, Australia |
| Li Li | PhD | 2005 | Professor, Pennsylvania State University |
| Robert Bruant | Postdoc | 2001-04 | Pioneer Water Management at Pioneer Natural Resources Company |
| Kristine Wammer | PhD | 2003 | Professor, University of St. Thomas Department of Chemistry |
| Christopher Knightes | PhD | 2000 | Research Engineer, U.S. EPA NERL Lab |
| Kenneth Lee | Postdoc | 1999 | Professor, Western New England University |
| Sandeep Ramachandran | MSE | 1999 | Axis Capital Holdings Limited |
| Saumyen Guha | Postdoc | 1996-98 | Professor, Indian Institute of Technology (IIT) Kanpur |
| Jingzhao Fan | MSE | 1996 | unknown |