

CURRICULUM VITAE

CATHERINE A. PETERS

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

TEL: 1-(609) 258-5645
cap@princeton.edu
<http://www.princeton.edu/~cap/>

EDUCATION:

PhD Joint degree in Civil Engineering and Engineering & Public Policy, Carnegie Mellon University, Pittsburgh, Pennsylvania, 1992. Thesis advisor: Prof. Richard G. Luthy.
MS Civil Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania.
BSE Chemical Engineering, University of Michigan, Ann Arbor, Michigan, 1985.

PROFESSIONAL EXPERIENCE:

2017- *Department Chair*
2011- *Full Professor*, Dept. of Civil and Environmental Engineering, Princeton University.
Associated Faculty, Department of Geosciences
Associated Faculty, Andlinger Center for Energy and the Environment
Associated Faculty, Princeton Institute for the Science and Technology of Materials (PRISM)
Associated Faculty, High Meadows Environmental Institute
Director, Program in Geological Engineering
Executive Committee, Program in Sustainable Energy
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 Fellow*, 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 of Environmental Engineering and Science Professors (*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
Geochemical Society of America

AWARDS AND HONORS:

2020 Distinguished Alumnus Award of CEE Carnegie Mellon University.
AAEES Honorary Board Certification by Eminence (BCEE), 2020.
Fellow of the Association of Environmental Engineering and Science Professors (AEESP), 2016.
Princeton Commendation List for Outstanding Teaching. 2016, 2018.
2012 EPA P3 Award for Sustainable Design Project, Power-in-a-Box™. \$90,000.
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.
Graduate Curriculum Development Award, Princeton University, May 2000. Conferred for "Molecular Modeling in Environmental Chemistry".
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.
Patricia Harris Scholarship, U.S. Department of Education, 1989-92.
Wharton Foundation Fellowship, 1986-87.
BSE degree granted *Cum Laude*, 1985.
Tau Beta Pi, National Engineering Honor Society, 1984.
Phi Lambda Upsilon, National Chemistry Honor Society, 1984.

PROFESSIONAL APPOINTMENTS -- STANDING:

Editor-in-Chief, *Environmental Engineering Science*, Mary Ann Liebert, Inc. Publishers. Since 2019.
AEESP Fellows Steering Committee, Since 2017.
Deputy Editor, *Environmental Engineering Science*, Mary Ann Liebert, Inc. Publishers. 2014-19.
Advisory Board, *Greenhouse Gases: Science and Technology*, Wiley Journals. Since 2011.
Member of Stakeholders Group, U.S. DOE National Risk Assessment Partnership (NRAP), since 2016.
External Advisory Board (EAB) of the Bioenvironmental Engineering Undergraduate Program at Rutgers University. Since 2015.
Advisory Committee, DOE EFRC Center on "Nanoscale Controls on Geologic CO₂" (NCGC) at Lawrence Berkeley National Laboratory. Since 2014.
Associate Editor, *Environmental Engineering Science*, Mary Ann Liebert, Inc. Publishers. 2011-2014.
Advancement Committee, Rice University Department of Civil and Environmental Engineering, 2013.
Member, U.S. Environmental Protection Agency (EPA) Science Advisory Board. 2007-2013.
Past President, *Association of Environmental Engineering and Science Professors* (AEESP). 2003-04.
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 of the Great Plains/Rocky Mountain Hazardous Substance Research Center, of the U.S. EPA. 1996-2002.
National Research Council Committee on Drinking Water Contaminants, 1998-2001.
Groundwater Technical Committee of the AGU Hydrology Section. 1998-2000.
Electronic Communication and Education Committee of the Association of Environmental Engineering and Science Professors (AEESP). 1996 - 2000.

PROFESSIONAL ACTIVITIES AND INVITED PANELS:

- 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 for sessions on “Energy Resources for Society” for Goldschmidt Conference 2017 Paris, France.
- 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.
- Organizing Committee and Session Leader, Gordon Research Conference Flow & Transport in Permeable Media, Les Diablerets, Switzerland. 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 chair, “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 (with L. Ferrand) of special session on "Multicomponent Contaminants in Surface and Subsurface Systems", AGU Fall Meeting, San Francisco, CA, Dec. 1997.

Proposal Review Panelist, National Science Foundation. 3/98, 12/01, 11/01, 11/02 etc.
Proposal Review Panelist, U. S. Environmental Protection Agency. 6/96, 7/96, 3/97. Etc.

PRINCETON UNIVERSITY SERVICE:

Elected Member, C/3 Faculty Advisory Committee on Appointments and Advancements, 2019-20.
Director of the Program in Geological Engineering, 2013 – present.
High Meadows Environmental Institute (formerly PEI) Advisory Committee, 2019-present.
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. Since 1999.
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 of systemic racism, racial injustice and anti-racism” 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 at Princeton University, “Carbon Capture and Geologic Sequestration: Linking Undergraduate Education with Cutting Edge Research”. 2010-2013.

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 Greentrotfit Project.

COURSES TAUGHT:

CEE 477	Engineering Design for Sustainable Development
CEE 304	Environmental Engineering and Energy
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 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 in EEWR: Carbon Capture and Geologic Sequestration
CEE 599	Special Topics in EEWR: Modeling of Geochemical Kinetics and Reactive Transport
ENV 201	Environmental Studies

PEER REVIEWED PAPERS

1. FT Ling; DA Plattenberger; CA Peters; AF Clarens (2020) “Sealing porous media via calcium silicate reactions with CO₂ to enhance the security of geologic carbon sequestration” *Environmental Engineering Science*. In review.
2. HA Hunter, FT Ling, CA Peters (2020) “Coprecipitation of Heavy Metals in Calcium Carbonate from Coal Fly Ash Leachate” *ACS ES&T Water*. Publication Date: Nov 4, 2020 DOI: 10.1021/acsestwater.0c00109.
3. 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>
4. 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. doi.org/10.1021/acs.est.0c03736
5. 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>

6. 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>
7. D. Plattenberger, T. Brown, F. Ling, X. Lyu, J. Fitts, C. Peters. (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.
8. 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.
9. 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
10. 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.
11. 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.
12. Deng, H.; Peters, C.A. (2019) “Reactive Transport Simulation of Fracture Channelization and Transmissivity Evolution” *Environmental Engineering Science*. 36(1):90-101.
13. 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.
14. 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. DOI: 10.1038/s41598-018-31335-3
15. 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. DOI: 10.1021/acs.est.8b01021
16. Plattenberger, D.A., Ling, F.T., Tao, Z., Peters, C.A., Clarens, A.F. (2018) “Calcium Silicate Crystal Structure Impacts Reactivity with CO₂ and Precipitate Chemistry” *Environmental Science & Technology Letters*. 2018, 5 (9), pp 558–563.
17. 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.
18. H. Deng, J.M. Bielicki, M. Oppenheimer, J.P. Fitts, C.A. Peters (2017) “Leakage risks of geologic CO₂ storage and the impacts on the global energy system and climate change mitigation” *Climatic Change*. 144(2):151–163.
19. 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
20. 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.
21. 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.

22. 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.
23. 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 CO₂ Storage" *Environmental Science & Technology*. 50(10) May 2016, 4923-4931.
24. 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.
25. 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.
26. Deng, H.; Fitts, J.P.; Crandall, D.; McIntyre, D.; Peters, C.A. (2015) "Alterations of fractures in carbonate rocks by CO₂-acidified brines" *Environmental Science & Technology*. Vol. 49, Issue 16, pp. 10226-10234.
27. 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.
28. 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-CO₂-Water Reactions", *Environmental Science & Technology*, Volume 48, Issue 24, 16 December 2014, Pages 14344-14351.
29. J.M. Bielicki; M.F. Pollak; J.P. Fitts; C.A. Peters, E.J. Wilson. (2014) "Causes and Financial Consequences of Geologic CO₂ Storage Reservoir Leakage and Interference with other Subsurface Resources". *International Journal of Greenhouse Gas Control*. Vol. 20: 272-284.
30. H. Deng, J.M. Bielicki, M. Oppenheimer, J.P. Fitts, C.A. Peters (2014) "Policy implications of Monetized Leakage Risk from Geologic CO₂ Storage Reservoirs" International Conference on Greenhouse Gas Technologies (GHGT-12), October 2014, Austin, TX. *Energy Procedia*, 63: 6852-6863.
31. J.P. Fitts and C.A. Peters, "Caprock Fracture Dissolution and CO₂ Leakage", (2013) In: Geochemistry of Geologic CO₂ Sequestration (Eds: DJ DePaolo, DR Cole, A Navrotsky, IC Bourg), *Reviews in Mineralogy & Geochemistry* Vol 77: 459 – 479 (2013).
32. 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.
33. J.P. Noguees, 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.
34. Deng, H.; Ellis, B.R.; Peters, C.A.; Fitts, J.P.; Crandall, D.; Bromhal, G.S. (2013) "Modifications of carbonate fracture hydrodynamic properties by CO₂-acidified brine flow". *Energy and Fuels*. 27(8): 4221 – 4231 DOI: 10.1021/ef302041s.
35. 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.
36. 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

37. 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.
38. 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.
39. M.F. Pollak, J.M. Bielicki, J.A. Dammal, 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.
40. 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 CO₂” *Greenhouse Gases: Science and Technology*, 2(4): 279-303. DOI: 10.1002/ghg.1294.
41. 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.
42. 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 CO₂-acidified brine flow” *Greenhouse Gases: Science and Technology*. Vol 1, Issue 3, 248-260.
43. Kim, D., W. B. Lindquist, C. A. Peters, (2011), Upscaling geochemical reaction rates accompanying acidic CO₂-saturated brine flow in sandstone aquifers, *Water Resour. Res.*, 47, W01505, doi:10.1029/2010WR009472.
44. Ellis, B.R.; Bromhal, G.S.; McIntyre, D.L.; Peters, C.A. 2011. “Changes in caprock integrity due to vertical migration of CO₂-enriched brine”, *Energy Procedia*, 4: 5327-5334. 10th Int’l Conf. on Greenhouse Gas Control Technologies, September 2010, Amsterdam, The Netherlands.
45. 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.
46. Ray, S. and C. A. Peters. 2010. “Adaptations in microbiological populations exposed to dinitrophenol and other chemical stressors.” *Environmental Toxicology & Chemistry*. Vol. 29, no. 10, pp. 2161-2168.
47. Ellis, B.R., Crandell, L.E., Peters, C.A. 2010. “Limitations for Brine Acidification due to SO₂ Co-injection in Geologic Carbon Sequestration.” *International Journal of Greenhouse Gas Control*. 4(3):575-582. DOI 10.1016/j.ijggc.2009.11.006.
48. Crandell, L.E., Ellis, B.R., Peters, C.A. 2010. “Dissolution Potential of SO₂ Co-Injected with CO₂ in Geologic Sequestration.” *Environmental Science & Technology*. 44 (1): 349–355. DOI 10.1021/es-2009-02612m.
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1. Peters, C.A. Kim, J.J. (2020) "Eagle Ford Shale: Synchrotron-Based Element and Mineral Maps." *Digital Rocks Portal*, DOI 10.17612/T3A6-6356 Project 258
<http://www.digitalrocksportal.org/projects/258>
2. 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.
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EDITORIALS, BOOK REVIEWS and LETTERS TO THE EDITOR

1. 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
2. B. Deng, M.J. Krzmarzick, C.A. Peters (2020) "AEESP Spotlight: Late 2020" *Environmental Engineering Science* 37(10):715-716.

3. V. Gadhamshetty, M.J. Krzmarzick, C.A. Peters (2020) “AEESP Spotlight: Mid 2020” *Environmental Engineering Science* 37(6):457-458.
4. D.B. Oerther, C.A. Peters (2020) “Educating Heads, Hands and Hearts in the COVID-19 Classroom” *Environmental Engineering Science*. 37(5): 303.
5. 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.
6. V. Gadhamshetty, S.J. Masten, C.A. Peters, D. Grasso (2019) “AEESP Journal Spotlight: Late 2019” *Environmental Engineering Science* 36(10):1367.
7. Deng, B.; Masten, S.J.; Peters, C.A.; Grasso, D. (2019) “AEESP Journal Spotlight: Mid 2019” *Environmental Engineering Science* 36(6):760.
8. Krzmarzick, M.J.; Masten, S.J.; Peters, C.A.; Grasso, D. (2019) “AEESP Journal Spotlight: Early 2019” *Environmental Engineering Science* 36(2):262-263.
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10. Masten, S.J., Peters, C.A., Grasso, D. (2018) “AEESP Journal Spotlight: Mid 2018” *Environmental Engineering Science* 35 (6): 662.
11. Brown, D.G., Peters, C.A., Masten, S.J., Grasso, D. (2018) “AEESP Journal Spotlight: Early 2018” *Environmental Engineering Science*, 35 (2), 141.
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PEER REVIEWED NRC COMMITTEE REPORTS:

1. 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.
2. 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.
3. 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.

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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. 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.

SHORT COURSE PRESENTATIONS:

"Caprock Fracture Dissolution and CO₂ Leakage", MSA Short Course on Geochemistry of Geologic CO₂ Sequestration, Lawrence Berkeley National Lab, December 2013.

CONFERENCE PRESENTATIONS AND ABSTRACTS:

1. D.F. Levia et al. "Planetary Resilience Jeopardized by Homogenization of the Terrestrial Water Cycle" H081-04, AGU Fall Meeting 2020.
2. A Mrad et al. "Peak Grain Forecasts in the U.S. High Plains and Withering Waters" GC066-06, AGU Fall Meeting 2020.
3. H. Deng et al. "Key controls and impacts of reaction-driven alteration of fracture-matrix interfaces" H067-01, AGU Fall Meeting 2020.
4. 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, AGU Fall Meeting 2020.
5. S Hajirezaie and CA Peters, "Stochastic modeling of carbonate mineral precipitation and dissolution in fractures" H067-06, AGU Fall Meeting 2020.
6. 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.
7. 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***
8. S. Hajirezaie, C.A. Peters, "Precipitation-driven permeability reduction of an underground fracture using magnetite nanoparticles" H14I-08. 2019 AGU Fall Meeting.
9. 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.
10. 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.
11. 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.
12. 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.
13. Hunter, H., Ling, F.T., Peters, C.A. "Metals Removal from Wastewater through Coprecipitation with Barite ". *AEESP Research and Education Conference*, Tempe, AZ, 2019.
14. 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.

15. D. Plattenberger, F.T. Ling, C.A. Peters, A.F. Clarens “Calcium Silicate Crystal Structure Impacts its Reactivity with CO₂ and Chemistry of Reaction Products” MR53A-0089, 2018 Fall Meeting AGU, Washington D.C.
16. F.T. Ling, D. Plattenberger, A.F. Clarens, C.A. Peters “A Reactive Transport Model of CaSiO₃ Reactions for Targeted Mineral Precipitation in Porous Media” H21N-1888, 2018 Fall Meeting AGU, Washington D.C.
17. 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.
18. F.T. Ling, H. Hunter, J.P. Fitts, A. Lanzirrotti, 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.
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23. 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 11-15 Dec.
24. 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.
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29. 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. May 2017.

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34. 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.
35. 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.
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37. 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.
38. Hang Deng, Jeffrey Fitts, Catherine Peters, “Geochemical alterations of carbonate fractures”, 250th ACS National Meeting, GEOC Division, Boston, MA, Aug 2015.
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41. Deng, H.; Bielicki, J.M.; Oppenheimer, M.; Fitts, J.P.; Peters, C.A. “How leakage risk in geologic CO₂ storage might impact climate change mitigation and policy choices”, 2015 AEESP Research and Education Conference, Yale University, June 2015.
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43. 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.
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57. 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.
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Environmental Engineers and Scientists of 2050: Education, Research, and Practice. Colorado School of Mines, July 2013.

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CONFERENCE PAPERS IN PUBLISHED PROCEEDINGS:

1. K. Spokas and C. Peters "Geologic Carbon Storage and Leakage Risks", Engineering Sustainability 2017: Innovation and the Triple Bottom Line. Pittsburgh, PA, April 2017.
2. 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.
3. C. Peters. "Environmental Geochemistry Perspectives on Subsurface Energy Technologies" (***INVITED***) Engineering Sustainability 2017: Innovation and the Triple Bottom Line. Pittsburgh, PA, April 2017.
4. 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 CO₂-rich brine" ARMA 13-592. American Rock Mechanics Association, 47th US Rock Mechanics / Geomechanics Symposium, San Francisco, CA June 2013. Vol. 13, p. 592.
5. 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/>.
6. C.M. Oldenburg, C. Doughty, C.A. Peters, P.F. Dobson. "Simulations of Upward Leakage of CO₂ in Long-Column Flow Experiments: Effect of Lateral Boundary Condition." Proc., TOUGH Symposium 2012, Lawrence Berkeley National Laboratory, Berkeley, California, Sept, 2012.
7. J. P. Nogue, 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>
8. 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.
9. 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.

10. S. Ray and C. A. Peters. 2007. "Microbial Responses and Adaptation to Chemical Stress", Abstracts of Papers of the American Chemical Society. 234th ACS National Meeting, Boston, MA, August 2007.
11. 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.
12. 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.
13. 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
14. 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.
15. 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.
16. 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. International Symposium on Environmental Hydraulics, Eds. D. Boyer; R. Rankin, Arizona State Univ., Tempe, AZ. p. 28.
17. Knightes, C. D., C. A. Peters. 2000. "Substrate Interactions in the Biodegradation Kinetics of PAH Mixtures." Abstracts of Papers of the American Chemical Society 220: 367-ENVR, Part 1 AUG 20 2000.
18. 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.
19. 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.
20. 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.
21. 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.
22. 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.

23. 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.
24. Small, M. J. and C. A. Peters. 1987. "Quantitative framework for assessing indoor radon policy". Proceedings of the ASCE Annual Conference on Environmental Engineering, Lake Buena Vista, FL, pp. 300-307.
25. Borrazzo, J. E., C. A. Peters, S. Peck, C.I. Davidson. 1987. "Determination of NO₂ 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.

INVITED SEMINARS AND PRESENTATIONS:

- “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)
- “Environmental Geochemistry Perspectives on Subsurface Energy Technologies” *Energy Seminar*, Stanford Precourt Institute for Energy, Stanford University, April 2018. (Host: Sally Benson)
- “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)
- “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.
- “Environmental Geochemistry Perspectives on Subsurface Energy Technologies” *Engineering Sustainability 2017: Innovation and the Triple Bottom Line*. Pittsburgh, PA, April 2017.
- “Permeability evolution in fractured carbonates exposed to reactive flow”, University of Calgary, Department of Geosciences, Alberta Canada. March 2017. (Host: Steve Bryant)
- “Permeability evolution in fractures exposed to reactive flow”, Imperial College London, Department of Earth Science & Engineering, Petroleum Geoscience & Engineering. March 2016. (Host: Branko Bijeljic)
- “Geochemical reactions and permeability evolution in caprock fractures”, University College London, Department of Earth Sciences, March 2016. (Host: Eric Oelkers)
- “Geological Carbon Sequestration: Geochemical Processes and Storage Reliability”, University of Delaware, Civil & Environmental Engineering, November 2015. (Host: Dominic Di Toro)
- “Geochemical reactions and permeability evolution in caprock fractures”, Temple University, Earth & Environmental Science, Sept 2015. (Host: Nicholas Davatzes)
- “CO₂ Storage Permanence in Geologic Carbon Sequestration” Workshop on Clean Utilization of Coal; 5th International Symposium of the McConnell International Scholars Academy. St. Louis, MO, October 2014.
- “Geochemistry of Caprock Fracture Dissolution and CO₂ Leakage in Geologic Carbon Sequestration” Gordon Research Conference on Environmental Sciences Water. Holderness, NH, June 2014.
- “Geochemistry of Caprock Fracture Dissolution and CO₂ Leakage in Geologic Carbon Sequestration”, Washington University, Department of Energy Environmental and Chemical Engineering, 2014.
- “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.
- “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.
- “CO₂-acidified brines and reactions with caprock minerals”, Workshop on Supercritical Carbon Dioxide and Material Interactions, Brookhaven National Laboratory, March 21-23, 2011.

- “DUSEL CO₂: A facility for experimental study of geologic carbon sequestration”, Sanford Underground Laboratory at Homestake, Lead, SD. April 20, 2010.
- “Geologic Carbon Sequestration: Challenges of Experimental Study”, Chinese Academy of Sciences, Institute for Geosciences (Host: Zhenhao Duan) Beijing, China. Nov. 6, 2009.
- “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.
- “Geologic Carbon Sequestration: Challenges of Experimental Study”, Tsinghua BP Clean Energy Research and Education Centre (Li Zheng, Director), Tsinghua University, Beijing, China. Nov. 5, 2009.
- “Geologic Carbon Sequestration: Challenges of Experimental Study”, Forum on Energy, Environment & Economic Policy Research, November 3-4, 2009, Jiao Tong University, Shanghai, China.
- “Reactions in geologic sequestration of CO₂: Fast, slow, and forget about it!”, CEE Seminar Series, Penn State University, April 2009. (Host: Bruce Logan)
- “Reactions in geologic sequestration of CO₂: Fast, slow, and forget about it!”, CEKA 30-Slides Seminar Series, Earth and Environmental Systems Institute, Penn State University, March 2009. (Host: Susan Brantley)
- “Reaction rate upscaling in geologic carbon sequestration”, Dept. of Geosciences, SUNY Stony Brook, February 2009.
- “Carbon Sequestration”, *Deep Carbon Cycle Workshop*, Geophysical Laboratory of the Carnegie Institute, Sponsored by the Alfred P. Sloan Foundation, May 2008.
- “Up-Scaling Mineral Accessibility and Pore Networks for CO₂ Reactive Transport in Sandstones”, U.S. DOE National Energy Technology Laboratory, Morgantown, WV, March 31, 2008.
- “Mineral Reactions in Geological CO₂ Sequestration: Fast, Slow, and Forget About It!”, Department of Civil & Environmental Engineering, McGill University, March 22, 2007. (Host: Subhasis Ghoshal)
- “Environmental Behavior of Complex PAH Mixtures”, Brown University, Division of Engineering, April 19, 2006.
- “Mineral Reactions in Geological CO₂ Sequestration: Fast, Slow, and Forget About It!”, School of Engineering, University of Vermont, January 31, 2006. (Host: Domenico Grasso)
- “Geologic Storage of CO₂ in Deep Saline Aquifers”, Department of Chemical Engineering, Yale University. February 12, 2003. (Host: Meny Elimelech)
- “Geologic Storage of CO₂ in Deep Saline Aquifers”, Department of Environmental Sciences and Engineering, University of North Carolina. January 31, 2003. (Host: Mike Aitken)
- “Geologic Storage of CO₂ in Deep Saline Aquifers”, Department of Civil and Environmental Engineering, Lehigh University. September 27, 2002. (Host: Arup Sengupta)
- “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.
- “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.
- “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.
- “CO₂ Storage in Deep Saline Aquifers”, Department of Engineering and Public Policy and Department of Civil & Environmental Engineering, Carnegie Mellon University. April 22, 2002.
- “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.

- "Risk Assessment for Subsurface Contamination Involving PAHs", PSE&G, Newark, New Jersey. July 2000.
- "Risk Assessment for Subsurface Contamination Involving PAHs", Interagency Risk Assessment Committee (IRAC), New Jersey Department of Environmental Protection, Trenton, NJ. May 2000.
- "Toward a Risk-Based Model for Multi-Component NAPL Contaminants: When is Remediation Intervention Worthwhile?" EPA Innovative Clean-Up Approaches. Nov. 1999, Bloomingdale, IL.
- "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.
- "Environmental Behavior and Risk Assessment of Complex Mixture NAPLs", Department of Geography and Environmental Engineering, Johns Hopkins University. April 2, 1999.
- "Environmental Behavior and Risk Assessment of Complex Mixture NAPLs", School of Environmental Science, Engineering, and Policy, Drexel University. Mar. 19, 1999.
- "Long-Term Chemodynamics of NAPL Environmental Contaminants", Dept. of Environmental Sciences, Rutgers University. Mar. 27, 1998.
- "Phase Behavior of Multi-Component NAPLs in the Environment", Hydrological Sciences Seminar Series, University of Colorado, Oct. 31, 1997.
- "Organic Pollutants in the Subsurface Environment: Chemistry, Technology and Risk Assessment", Univ. of Dalecarlia, Borlange, Sweden. Host: Mr. Roger Bydler. Nov. 1996.
- "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.
- "Constraints and Uncertainties in Cleanup Strategies", Gordon Research Conference, Environmental Sciences: Water, June 19-24, 1994, New Hampton, NH.
- "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:

- "Managing the Triad of Teaching, Research and Service Post-Tenure" Panelist, AEESP Workshop, University of Michigan, Ann Arbor, MI, June 2017.
- "Environmental Regulation in the U.S.: From Smog to Acid Rain to Greenhouse Gases", E-affiliates Retreat, Princeton, NJ February 2017.
- "The Science and Innovation of Fossil Fuels and the Environment", E-affiliates Retreat, Princeton, NJ January 2016.
- "Portable Power: Opportunities for Student Engagement", IEEE PCJS Education Society Chapter Meeting, Princeton University, April 10, 2013.
- "Library Research Skills in Engineering Education", Invited panelist for *Library Research Skills: Can They Be Taught?* May 2009, Princeton University Libraries.
- "Energy, the Environment, and a Sustainable Future", Keynote Address for the Society of Women Engineers, Princeton University, Nov 2008.
- "Engineering and the Liberal Arts", Symposium on Engineering and Liberal Education, Union College, Schenectady, NJ May 2008.
- "Topics, Technology and the Times We Live In", Colloquium for high school girls interested in engineering, Marymount High School, New York, NY. May 2007.
- "Sustainable Energy in the CEE Curriculum", Frontiers in Environmental Engineering Education, NSF-sponsored workshop, ASU January 2007.
- "Engineering in a Liberal Arts Environment: Observations and Directions", School of Engineering, University of Vermont, January 30, 2006.

- “Putting CO₂ in its Place: Engineering Solutions to a Global Environmental Problem”, Presentation to all BSE freshmen, Princeton University, September 2004.
- "Women Engineers in Academia: An American Perspective", 1996, Tomasmässan Convention on Women and Technology, Sponsored by Falu Ingeniörsklubb. Falun, Sweden, Nov. 1996.
- "Women Engineers in Academia: An American Perspective", Univ. of Dalecarlia, Borlange, Sweden. Hosted by the Studenternas Näringslivsenhet, Nov. 1996.
- "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.

MENTORING OF GRADUATE STUDENTS AND POSTDOCS

	Degree or appointment	Graduation year, or term	Current position
Zahra Bajalan	MSE	[future]	student
Julie Kim	PhD	[future]	student
Sassan Hajirezaie	PhD	[future]	student
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	Assistant 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	Scientist, Lawrence Berkeley National Laboratory
Zhongxuan Jia	MSE	2013	Wells Fargo
Lauren (Crandell) Beckingham	PhD	2012	Assistant Professor, Auburn University
Brian Ellis	PhD	2012	Assistant Professor, University of 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