

## **CURRICULUM VITAE**

### **PETER R. JAFFE**

William L. Knapp '47 Professor of Civil Engineering  
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### **Education:**

Vanderbilt University, Nashville, TN.

Ph.D. in Environmental and Water Resources Engineering, December 1981.

M.S. in Environmental and Water Resources Engineering, May 1980.

Universidad Simón Bolívar, Caracas, Venezuela.

B.S. in Chemical Engineering, December 1977.

**Languages:** Fluent in English, Spanish, and German.

### **Professional Interests:**

Chemical, Physical, and Biological Fate of Conventional and Toxic Pollutants in Water Systems and Soils;  
Water Quality Modeling; Water Pollution Control; Remediation of Contaminated Groundwater and Soils.

### **Employment Record:**

- \* Acting Chair, Department of Civil and Environmental Engineering, Sept. 2020 – Jan. 2021.
- \* Associate Director for Research, Andlinger Center for Energy and the Environment, 2013 – 2019.
- \* Director of Graduate Studies, Department of Civil and Environmental Engineering, September 2009 – 2012, 2013 – 2014.
- \* Chair, Department of Civil and Environmental Engineering, July 1999 to June 2005.
- \* Professor, Department of Civil and Environmental Engineering, Princeton University, Princeton, N.J., since July 1996. Associate Professor, July 1991 to June 1996. Assistant Professor, February 1985 to June 1991.
- \* Director, Environmental Engineering and Water Resources Program, Princeton University, Princeton, N.J., July 1993 to July 1997.
- \* Profesor Agregado, Departamento de Procesos y Sistemas, Universidad Simón Bolívar, Caracas, Venezuela, September 1983 to January 1985.
- \* Research Associate, Department of Civil Engineering, Princeton University, Princeton, N.J., January 1982 to July 1983.

### **Selected Professional Experiences and Services:**

- \* National Academies of Sciences, Engineering, and Medicine, Committee on “Alternatives for the Demilitarization of Conventional Munitions,” August 2017 - 2018.
- \* Vanderbilt University, Department of Civil and Environmental Engineering Advisory Council, 2014 to present.
- \* Member, NSF ReNUWIt (Stanford University’s ERC on Water Technology) review panel, 2014-present.
- \* Imagine H2O Scientific Advisory Council Member, 2013 – present.
- \* New Jersey Water Resources Research Institute Advisory Council, 2001-2014.
- \* Advisory Board, Intl. Conf. Beneficial Use of Waste and Waste By-products, Albi, France, 2004; Patras Greece, 2008; Beijing, China, 2010; Porto, Portugal 2014; Rio, Brazil, 2014; Albi France 2016.
- \* Rutgers University, Chair, Bioresource Engineering Advisory Board, 2001 to 2015.
- \* University of Delaware, Department of Civil and Environmental Engineering Advisory Council, 2007 to 2012.
- \* New Jersey Water Resources Research Institute Advisory Council, 2001 to 2013.
- \* Member of the standing Technical Expert Panel of The Environment and Water Industry Development Council, Singapore, 2006-2008.
- \* Duke University, NIH Superfund Center Advisory Committee, 2000 to 2008.
- \* NYU, NIH Superfund Center Advisory Committee, 2002 to 2004.
- \* US Department of Energy, Environmental Management Advisory Committee, 1999 to 2001.
- \* Faculty Search Committee, CEE, Lehigh University, 2000.
- \* NJ Future, Sustainable State Advisory Committee, 1999.
- \* AEESP, Latin America International Committee, 1996-1999.
- \* NIH Superfund Committee, 1994.

- \* International Soil Science Society, Committee for the Symposium on Management of Contaminated Soils, 1994.
- \* AGU Groundwater Committee, 1992-1994.
- \* NRC, Committee on Pyrethroids and Ecological Risk Assessment, 1989-1990.
- \* ASCE – Board of Directors, NJ Section – Central Branch, 1989–1990.
- \* NJ Department of Environmental Protection, Member “Oil and Grease Task Force Meetings,” 1982.
- \* Associate Editor / Editorial Board Member: Waste and Biomass Valorization, 2009 to present; Journal of Environmental Engineering, 2006 to 2012; Ingeniería Hidráulica en México, 1996 - ; Water Resources Research, 1993 to 1997.

**Selected Consultantships:**

American Petroleum Institute 1986; U.S. Department of Justice; Environ Corporation, 1990; N.Y. State, Department of Law, 1989 to 1991; Schlumberger Technology Corporation, 1992; US Navy 1986-1987; McKin Superfund Site Trustees, 1993 to 1999; PPG Industries, 2005; Tyson, 2008; International Paper, 2008; Bechtel Corporation, 2009; ExxonMobile, 2012; HKF Technology 2015 – 2019.

**Honors and Appointments :**

- \* Winner of the 2021 Schowalter Award. Award given to senior research-active faculty based on Princeton’s School of Engineering and Applied Sciences wide contributions to research, teaching, and service.
- \* Testified at the joint hearing titled “*Forever Chemicals: Research and Development for Addressing the PFAS Problem,*” of the House Subcommittee on Environment and the House Subcommittee on Research and Technology, of the House Committee on Science, Space, and Technology, December 7<sup>th</sup>, 2021.
- \* Excellent International Cooperation Project Award, “Application of Feamnox Process in Wastewater Treatment,” awarded by the Guangzhou Association of Industrial Environmental Protection, 2017.
- \* Elected Fellow of the American Geophysical Union, 2012. *For fundamental, quantitative work on biogeochemical reaction and transport phenomena in soils and sediments.*
- \* Appointed as Board Certified Environmental Engineering Member (BCEEM) of the American Academy of Environmental Engineers (AAEE) by Eminence, November 2008.
- \* Visiting Researcher Ecole Nationale Supérieure des Techniques Industrielles et des Mines d’Albi-Carmaux, France, May/June 2006.
- \* University of Auckland Foundation visitor, July 2000.
- \* Excellence in Teaching Award, Princeton University Undergraduate Engineering Council, 1998.
- \* Senior Research Scholar (Part-time Associate), International Institute for Applied Systems Analysis, Vienna, Austria, June 1 to August 31, 1994 - 1996.
- \* AT&T Industrial Ecology Fellow, 1993-1995.
- \* Fellowship from the American Academy of Arts and Sciences to visit the International Institute for Applied Systems Analysis, Vienna, Austria, November 1991.

**University Responsibilities (Princeton University):**

**Other University Affiliations:**

Associated Faculty, Department of Geology and Geophysical Sciences.  
 Associated Faculty, Princeton Environmental Institute (PEI).  
 Associated Faculty, Andlinger Center for Energy and the Environment (ACEE).  
 Associated Faculty, Princeton Institute for the Science and Technology of Materials (PRISM).

**University Committees (partial list):**

Committee on Conference and Faculty Appeal (CCFA), 2015-present.  
 Elected Member of the Faculty Advisory Committee on Appointments and Advancements, 2012-2013  
 Geological Engineering Committee, 1985 to -.  
 Engineering Biology Committee, 1993 to present.  
 Environmental Engineering and Water Resources Program Committee, 1985 to present.  
 Faculty Committee on the Graduate School, Policy Subcommittee, AY 2009/2010  
 Faculty Committee on the Graduate School, 2009 to 2011.  
 Architecture and Engineering Committee, 2000 to 2005.  
 Radiation Safety Committee, 1990 to 1999.  
 Princeton Materials Institute Curriculum Committee, 1994 to 1996.  
 Princeton Environmental Institute Executive Committee, 1994 to 1996.  
 Princeton Environmental Institute Search Committee, 1995 to 1997.

Princeton Environmental Institute Curriculum Committee, 1995 to 1997.  
Elected Member of the Committee on Course of Study, 1988 to 1990.

Other Responsibilities:

Faculty Advisor, Engineers Without Borders, 2008 to present.  
Director of Graduate Studies, 2009 to 2011.  
Freshmen Advisor, 1987 to 1995, 2006 to 2010.  
Department Right to Know Coordinator, ~1990 to 2001.  
Department Chemical Safety Officer, 1990 to 2001.  
Acting Director Water Resources Program, 1989/90.

Courses Taught:

CEE 303, Environmental Studies; Spring semesters 1987 to 1993.  
CEE 308, Environmental Engineering Laboratory; Spring semesters since 1997.  
CEE 471, Introduction to Water Pollution Technology; Fall semesters since 1985.  
CEE 472, Fundamentals of Water Quality Analysis; Spring 1985, 1986.  
CEE 584, Environmental Chemistry; alternate Spring semesters since 1988.  
CEE 590, Water Quality Modeling and Analysis; Fall 1985, alternate Spring semesters since 1987.

Ph.D. Dissertations Supervised:

- \* Patrick J. Witkowski, "Modeling Sorptive Interactions During Transport of a Persistent Organic Contaminant: Aroclor 1242," 1990.
- \* Stewart W. Taylor, "Transport of Substrate and Biomass in Porous Media with Application to In-situ Bioremediation of Organic Contaminants in Groundwater," 1990.
- \* Paul T. Imhoff, "Dissolution of a Non-Aqueous Phase Liquid in Saturated Porous Media," 1992.
- \* James A. Smith, "Sorption of Nonionic Organic Compounds to Organoclays from Water," 1992.
- \* H. Jean Cho, "The Volatilization of Organic Compounds in Unsaturated porous Media during Infiltration," 1992.
- \* David M. Tuck, "Immiscible Displacement of Residual Tetrachloroethylene from Saturated and Unsaturated Porous Media," 1992.
- \* Jae Woo Park, "Engineering Applications of Organo-Oxides for Decontamination of Water and Soil," 1994.
- \* Naresh Singhal, "Anaerobic Dehalogenation of TCE in Continuous Flow Systems," 1995.
- \* Cecilia L. MacLeod, "Mercury in the New Jersey Coastal Plain," 1995.
- \* Saumyen Guha, "Surfactant Enhanced Bioremediation: Bioavailability of Hydrophobic Organic Compounds Partitioned into the Micellar Phase of Nonionic Surfactants," 1995.
- \* Jonathan C. Johnson, "Mass Transfer in Porous Media: The Effect of Surfactants on the Mass Transfer Rate Coefficient," 1998.
- \* Sherwood L. Smith, "Modeling the Transport of Trace Metals in Water-Saturated Soils and Sediments as Affected by the Biodegradation of Organic Substrates via Various Terminal Electron Acceptors," 1998.
- \* Pete L. Kallin, "Modeling the Fate and Transport of Trace Metal Contaminants in Natural and Constructed Surface-Flow Wetlands," 1999.
- \* Joseph R. Stencel, "Trace Metals in Water from crude Oil: Surfactant and Humic Acid Enhanced Partitioning," 1999.
- \* Derick G. Brown, "Effects of Nonionic Surfactants on Bacterial Transport Through Porous Media," 2000.
- \* Hyun-su Kim, "Dynamics of Aerobic and Denitrifying Bacterial Strains During the Biodegradation of Toluene in a Porous Medium: Experimental Quantification and Mathematical Simulation," 2004.
- \* Jung-Hyun Choi, "The Effect of Plants on the Dynamics of Sulfur Species and Zinc in Wetland Sediments," 2004.
- \* Shangping Xu, "An Investigation on the Effects of Herbaceous Plants on the Biogeochemistry of Wetland Sediments," 2005.
- \* Junu Shrestha, "Effects of Anthropogenic Disturbances on the Iron and Nitrogen Cycles in Riparian Wetland Soils," 2007.
- \* Luke H. MacDonald, "Microbiological and Plant-Driven Redox Systems in Groundwater and Links Between Water, Health, and Policy," 2010.
- \* Bernice R. Rosenzweig, "Stormwater Detention Ponds and the Nitrogen Cycle in Urban Watersheds," 2010.
- \* Jeffrey S. Paull, "Influence of Hydrophytic Vegetation on Biogeochemical Processes Within Contaminated Wetland Systems," 2012.

- \* Matthew C. Reid, “Physical-Chemical Dynamics of Trace Gases in Wetland Soils: Implications for the Water Quality and Carbon Sequestration Functions of Wetlands,” 2014.
- \* Hagar ElBishlawi, “Immobilization of Inorganic Species by Reactive Porous Media: Control of Trace Metals in a Constructed Urban Marsh and Fluoride Removal Via Novel Calcite-hydroxyapatite,” 2014.
- \* Minjin Lee, “Interactions Between Nitrogen and Hydrological Cycles: Implications for River Nitrogen Responses to Climate and Land Use with the Model LM3-TAN,” 2015.
- \* David S. Pal, “Simultaneous Measurement of Hydrogen and Methane: Investigating the Inhibition of Methanogenesis in Wetland Sediments,” 2016.
- \* Zheyun Zhang, “Effects of Nutrients and Redox Transitions on Arsenic Dynamics in Wetlands, and Microbially Mediated Pyrrhotite Formation,” 2016.
- \* Melany P. Ruiz-Urigüen, “Anaerobic Ammonium Removal by Feammox Bacteria in Electrode Based Systems and Microbial Performance in a Nitric Oxide Denitrification Bioreactor,” 2019.
- \* Arianna Sherman, “Biogeochemical Impacts of Typhoon Disturbance in Polluted Aquatic Ecosystems and the Role of the Feammox Process in Contaminated Riparian Zones,” 2020.

**Professional Affiliations:**

American Geophysical Union, American Geochemical Society, American Society for Microbiology, American Academy of Environmental Engineers and Scientists, American Society of Civil Engineers, Water Environment Federation, Federal Water Quality Association.

**Patents/Provisional Applications:**

- \* “Enhancing Feammox/PFAS Defluorination via PAA-coated Ferric Iron Phase,” PU 23-3988 Disclosure, Dec. 2022 (with B. Koel).
- \* “Methods and Compositions for Nitrogen Removal Using Feammox Microorganisms,” Patent No. US 10,479,712 B2, Nov. 19, 2019 (with S. Huang).
- \* “Biodegradation of Fluorochemicals,” U.S. Provisional Application No. 62/792,971, January 16, 2019, (with S. Huang).
- \* “Biodegradation of Fluorochemicals,” U.S. Provisional Application No. 62/737,255, Sept. 27, 2018, (with S. Huang).
- \* “Methods and Compositions for Nitrogen Removal Using Feammox Microorganisms,” Patent No. US 2018/0029909 A1, Feb. 1, 2018 (with S. Huang).
- \* “Feammox Activity in Bioelectrochemical Reactors” U.S. Provisional Application No. 62/737,255, Sept. 27, 2018.
- \* “Oxidant Enhanced Feammox Activity,” International Application No.: PCT/US2018/052710, September 25, 2018 (with S. Huang).
- \* “Use of Elemental Sulfur to Stimulate Feammox Activity,” U.S. Provisional Patent Application 62565480, 2017 (with S. Huang).
- \* “Methods and Compositions for Nitrogen Removal Using Feammox Microorganisms,” Patent No. US 9,815,732 B2, Nov. 14, 2017 (with S. Huang).
- \* “Methods and Compositions for Nitrogen Removal Using Feammox Microorganisms,” Patent No. US 9,815,723, Nov. 14, 2017 (with S. Huang).
- \* “Nanoparticulate apatite-coated-calcite/limestone filter materials for removing contaminants from contaminated water,” U.S. Patent Application 14/695,220, 2015 (with S. Myneni).
- \* “Metal Reduction and Degradation of Organic Contaminants via Feammox,” U.S. Provisional Patent Application 62058453, 2014 (with S. Huang and E. Gilson).
- \* “A Newly Identified Microorganism Affecting Nitrogen Cycle: Ammonium Oxidation Under Iron Reducing Conditions,” U.S. Provisional Patent Application #61/821,488, 2013 (with S. Huang).
- \* “Semi-permanent Dialysis Samplers for Long Term Sediment Environmental Monitoring,” U.S. Provisional Patent Application No. 61/483,347, 2011 (with J. Vocaturo, L. McDonald, J. Paull).
- \* “Extraction of Non-Ionic Organic Pollutants,” U.S. Patent # 5458437, 1995 (with J. Park).

## I. Refereed Publications

### i. Journals:

- Sherman, A., S. Huang, and P.R. Jaffé, "Impacts of Storm Disturbance and the Role of the Feammox Process in High Nutrient Riparian Sediments," in revision.
- Sima, M.W., S. Huang, and P.R. Jaffé, "Modeling the Kinetics of Perfluorooctanoic and Perfluorooctane Sulfonic Acid Biodegradation by *Acidimicrobium* sp. Strain A6 during the Feammox Process," in revision.
- Ruiz-Urigüen, M., W. Shuai, S. Huang, and P.R. Jaffé, "Biodegradation of PFOA in Microbial Electrolysis Cells by *Acidimicrobiaceae* sp. Strain A6," *Chemosphere*, 2022, Vol. 292, p. 133506, <https://doi.org/10.1016/j.chemosphere.2021.133506>.
- Huang, S., M. Sima, Y. Long, C. Messenger, and P.R. Jaffé, "Degradation of Perfluorooctanoic Acid (PFOA) in Biosolids by *Acidimicrobium* sp. Strain A6," *J. of Hazardous Materials*, 2022, Vol. 424, Part D, p. 127699, <https://doi.org/10.1016/j.jhazmat.2021.127699>.
- Huang, S., A. Sherman, C. Chen, and P.R. Jaffé, "Tropical cyclone effects on water and sediment chemistry and the microbial community in estuarine ecosystems," *Environmental Pollution*, 2021, Vol. 286, <https://doi.org/10.1016/j.envpol.2021.117228>.
- Sima, M., and P.R. Jaffé, "A Critical Review of Modeling Poly- and Perfluoroalkyl Substances (PFAS) in the Soil-Water Environment," *Science of the Total Environment*, 2021, Vol. 757, 143793, <https://doi.org/10.1016/j.scitotenv.2020.143793>.
- Zazo, J., P. García-Muñoz, G. Pliego, J. Silveira, P. Jaffé, and J. Casas, "Selective reduction of nitrate to N<sub>2</sub> using ilmenite as a low-cost photo-catalyst," *Applied Catalysis B: Environmental*, 2020, Vol. 273, 15, 118930, <https://doi.org/10.1016/j.apcatb.2020.118930>.
- Wagner, R. O., S. Hsu, J.N. Kick, S. Bisogno, C. Heubner, S. Iyer, S. Overbey, and P. Jaffé, "An Interdisciplinary Approach to the Sustainability of a Gravity-Fed Water System in the Peruvian Andes," *International Journal for Service Learning in Engineering*, 2019, Vol. 14, No.3, <https://doi.org/10.24908/ijlsle.v14i3.13182>.
- Huang, S., Z. Zheng, Q. Wei, I. Han, and P.R. Jaffé, "Performance of sulfur-based autotrophic denitrification and denitrifiers for wastewater treatment under acidic conditions," *Bioresource Technology*, 2019, Vol. 295, <https://doi.org/10.1016/j.biortech.2019.122176>.
- Huang, S., and P.R. Jaffé, "Defluorination of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) by *Acidimicrobium* sp. strain A6," *Environmental Science and Technology*, 2019, Vol. 53, No 19, pp 11410-11419, <http://dx.doi.org/10.1021/acs.est.9b04047>.
- Ruiz, M., D. Steingart, and P.R. Jaffé, "Oxidation of Ammonium by Feammox *Acidimicrobiaceae* sp. A6 in Microbial Electrolysis Cells," *Environmental Science: Water Research & Technology*, 2019, Vol. 5, pp. 1582 – 1592, <https://doi.org/10.1039/c9ew00366e>.
- Razaviarani, V., J.A. Zazo, J.A. Casas, P.R. Jaffé, "Coupled Fenton-denitrification process for the removal of organic matter and total nitrogen from coking plant wastewater," *Chemosphere*, 2019, Vol. 224, pp. 653-675, <https://doi.org/10.1016/j.chemosphere.2019.02.178>.
- Ge, J., S. Huang, I. Han, and P.R. Jaffé, "Degradation of Tetra- and Trichloroethylene under Iron Reducing Conditions by Feammox *Acidimicrobiaceae* sp. A6," *Environmental Pollution*, 2019, Vol. 247, pp. 248-255, <https://doi.org/10.1016/j.envpol.2019.01.066>.
- Shuai, W., and P.R. Jaffé, "Anaerobic Ammonium Oxidation Coupled to Iron Reduction in Constructed Wetland Mesocosms," *Science of the Total Environment*, 2019, Vol. 648, pp. 984-992, <https://doi.org/10.1016/j.scitotenv.2018.08.189>.
- Razaviarani, V., M. Ruiz-Urigüen, P.R. Jaffé, "Denitrification of Nitric Oxide using Hollow Fiber Membrane Bioreactor; Effect of Nitrate and Nitric Oxide Loadings on the Reactor Performance and Microbiology," *Waste and Biomass Valorization*, 2019, Vol. 10, pp. 1989–2000. <https://doi.org/10.1007/s12649-018-0223-z>.
- Bilgin, A., and P.R. Jaffé, "Precipitation of Copper(II) in a Two-Stage Continuous Treatment System Using Sulfate Reducing Bacteria," *Waste and Biomass Valorization*, 2019, Vol. 19, pp. 2907-2914, <http://link.springer.com/article/10.1007/s12649-018-0329-3>.
- Ruiz, M., W. Shuai, and P.R. Jaffé, "Electrode Colonization by the Feammox Bacterium *Acidimicrobiaceae* sp. Strain A6," *Applied and Environmental Microbiology*, 2018, Volume 84, Issue 24 e02029-18, doi: [10.1128/AEM.02029-18](https://doi.org/10.1128/AEM.02029-18).
- Lee, M., C. Jung, E. Shevliakova, S. Malyshev, P.C.D. Milly, H. Han, S. Kim, K. Kim, and P.R. Jaffé, "Control of Nitrogen Exports from River Basins to the Coastal Ocean: Evaluation of Basin Management Strategies for Reducing Coastal Hypoxia," *Journal of Geophysical Research: Biogeosciences*, 2018, <https://doi.org/10.1029/2018JG004436>.

- Huang, S., C. Chen, and P.R. Jaffé, "Seasonal Distribution of Nitrifiers and Denitrifiers in Urban River Sediments Affected by Agricultural Activities," *Science of the Total Environment*, Vol. 642, 2018, pp. 1282–1291, <https://doi.org/10.1016/j.scitotenv.2018.06.116>.
- Huang, S., and P.R. Jaffé, "Isolation and Characterization of an Ammonium-Oxidizing Iron Reducer: *Acidimicrobiaceae* sp. A6," *PLOS ONE*, Vol. 13, No. 4, 2018, e0194007, <https://doi.org/10.1371/journal.pone.0194007>.
- Pal, D.S., R. Tripathee, M.C. Reid, K.V.R. Schäfer, and P.R. Jaffé, "Simultaneous Measurements of Dissolved CH<sub>4</sub> and H<sub>2</sub> in Wetland Soils," *Environmental Monitoring and Assessment*, 2018, 190: 176. <https://doi.org/10.1007/s10661-018-6552-3>.
- Zhang, Z., H.S. Moon, S. Myneni, and P.R. Jaffé, "Phosphate Enhanced Abiotic and Biotic Arsenic Mobilization in the Wetland Rhizosphere," *Chemosphere*, Vol. 187, 2017, pp. 130-139, <https://doi.org/10.1016/j.chemosphere.2017.08.096>.
- Kaplan, D.I., S.W. Buettner, D. Li, S. Huang, P.G. Koster van Groos, P.R. Jaffé, and J.C. Seaman, "In situ Porewater Uranium Concentrations in a Contaminated Wetland: Effect of Season and Sediment Depth," *Applied Geochemistry*, Vol. 85, Part B, 2017, pp. 128-136, <http://dx.doi.org/10.1016/j.apgeochem.2016.11.017>.
- Zhang, Z., H.S. Moon, S.B. Myneni, and P.R. Jaffé, "Effect of Dissimilatory Iron and Sulfate Reduction on Arsenic Dynamics in the Wetland Rhizosphere and its Bioaccumulation in Plants," *Journal of Hazardous Materials*, 2017, Vol. 321, pp. 382-389, [doi: 10.1016/j.jhazmat.2016.06.022](https://doi.org/10.1016/j.jhazmat.2016.06.022).
- Koster van Groos, P.G., D.I. Kaplan, H. Chang, J.C. Seaman, D. Li, A.D. Peacock, K.G. Scheckel, and P.R. Jaffé, "Uranium Fate in Wetland Mesocosms: Effects of Plants at two Iron Loadings with Different pH Values," *Chemosphere*, 2016, Vol. 163, pp. 116-124, [doi: 10.1016/j.chemosphere.2016.08.012](https://doi.org/10.1016/j.chemosphere.2016.08.012).
- Lee, M., E. Shevliakova, S. Malyshev, P. C. D. Milly, and P.R. Jaffé, "Climate Variability and Extremes Interacting with Nitrogen Storage Amplify Eutrophication Risk," *Geophysical Research Letters*, 2016, Vol. 43, Issue 14, pp. 7520–7528, [doi: 10.1002/2016GL069254/full](https://doi.org/10.1002/2016GL069254/full).
- Kaplan, D.I., R. Kukkadapu, J. Seaman, B. Arey, A. Dohnalkova, S. Buttner, D. Li, T. Varga, K.G. Scheckel, P.R. Jaffé, "Iron Mineralogy and Uranium-Binding Environment in the Rhizosphere of a Wetland Soil," *Science of the Total Environment*, 2016, Vol. 569–570, pp. 53–64, [doi: 10.1016/j.scitotenv.2016.06.120](https://doi.org/10.1016/j.scitotenv.2016.06.120).
- Pennino, M., R. McDonald, and P.R. Jaffé, "Watershed-Scale Impacts of Stormwater Green Infrastructure on Hydrology, Nutrient Fluxes, and Combined Sewer Overflows in the Mid-Atlantic Region," *Science of the Total Environment*, 2016, Vol. 565, pp. 1044-1053, [doi: 10.1016/j.scitotenv.2016.05.101](https://doi.org/10.1016/j.scitotenv.2016.05.101).
- Huang, S., C. Chen, X. Peng, and P.R. Jaffé, "Environmental Factors Affecting the Presence of *Acidimicrobiaceae* and Ammonium Removal under Iron-reducing Conditions in Soil Environments," *Soil Biology and Biochemistry*, 2016, Vol. 98, pp. 148-158, [doi: 10.1016/j.soilbio.2016.04.012](https://doi.org/10.1016/j.soilbio.2016.04.012).
- Kaplan, D.I., C. Xu, S. Huang, Y. Lin, N. Tolić, K.M. Roscioli-Johnson, P.H. Santschi, and P.R. Jaffé, "Unique Organic Matter and Microbial Properties in the Rhizosphere of a Wetland Soil," *Environmental Science and Technology*, 2016, 50, 4169–4177, [doi: 10.1021/acs.est.5b05165](https://doi.org/10.1021/acs.est.5b05165).
- Pal, D., P.R. Jaffé, "Modeling the Inhibition of Dissolved H<sub>2</sub> on Propionate Fermentation and Methanogenesis in Wetland Sediments," *Ecological Modelling*, Vol. 322, 2016, pp. 115–123, [doi: 10.1016/j.ecolmodel.2015.11.005](https://doi.org/10.1016/j.ecolmodel.2015.11.005).
- Gilson, E.R., S. Huang, and P.R. Jaffé, "Biological Reduction of Uranium by *Acidimicrobiaceae* bacterium A6," *Biodegradation*, 2015, Volume 26, Issue 6, pp. 475-482, [doi: 10.1007/s10532-015-9749-y](https://doi.org/10.1007/s10532-015-9749-y).
- Gilson, E., S. Huang, P. Koster van Groos, K. Scheckel, O. Qafoku, A. Peacock, D. Kaplan, P. Jaffe, "Uranium Redistribution due to Water Table Fluctuations in Sandy Wetland Mesocosms," *Environmental Science and Technology*, 2015, 49 (20), pp. 12214–12222, [doi: 10.1021/acs.est.5b02957](https://doi.org/10.1021/acs.est.5b02957).
- Reid, M.C., D.S. Pal, and P.R. Jaffé, "Dissolved Gas Dynamics in Wetland Soils: In situ Measurements and Modeling of Root-Mediated Gas Exchange and Transport to the Surface," *Water Resources Research*, 2015, Vol. 51, No. 9, pp. 7343–7357, [doi: 10.1002/2014WR016803](https://doi.org/10.1002/2014WR016803).
- Li, D., D. Kaplan, H. Chang, J. Seaman, P. Jaffe, P. Koster van Groos, K. Scheckel, C. Segre, N. Chen, D.T. Jiang, M. Newville, A. Lanzirrotti, "Spectroscopic Evidence of Uranium Immobilization in Acidic Wetlands by Natural Organic Matter and Plant Roots," *Environmental Science and Technology*, 2015, 49 (5), pp. 2823–2832, [doi: 10.1021/es505369g](https://doi.org/10.1021/es505369g).
- ElBishlawi, H., and P.R. Jaffé, "Characterization of Dissolved Organic Matter from a Restored Urban Marsh and its Role in the Mobilization of Trace Metals," *Chemosphere*, 2015, 127, pp. 144–151. [doi: 10.1016/j.chemosphere.2014.12.080](https://doi.org/10.1016/j.chemosphere.2014.12.080).
- Huang, S. and P.R. Jaffé, "Characterization of Incubation Experiments and Development of an Enrichment Culture Capable of Ammonium Oxidation under Iron-Reducing Conditions," *Biogeosciences*, 2015, 12, 769-779, [doi: 10.5194/bg-12-769-2015](https://doi.org/10.5194/bg-12-769-2015).

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- Jaffé, P.R., "Dinámica de Nutrientes en el Lago de Valencia; Desarrollo de un Modelo Preliminar," Prepared for the Research Division of the Venezuelan Department of the Environment and Natural Resources, March 1985.
- Jaffé, P.R., "The Fate of Toxic Substances in Rivers," Ph.D. Dissertation, Vanderbilt University, December 1981.
- Jaffé, P.R., "Effluent Quality Control in the Activated Sludge Process Using Oxygen Uptake Rate," M.S. Thesis, Vanderbilt University, Department of Environmental and Water Resources Engineering, May 1980.

**ii. Conference Presentations with Abstracts:**

- Park, J., S. Huang, B.E. Koel, and P.R. Jaffé, "Effect of Polyacrylic acid (PAA) Coating of Ferrihydrite on the Particle Stability and Biodegradation of Perfluorooctanoic Acid (PFOA)," 2022 Superfund Research Program Annual Meeting, NIEHS, Raleigh, NC, December 2022.
- Smorada, C., S. Huang, and P.R. Jaffé, "Biodegradation of Perfluoroalkyl Substances in Neuse and Cape Fear River Sediments by *Acidimicrobium* sp. strain A6," to be presented at the 2022 AGU Fall Meeting, Chicago, December 2022.
- Sima, M., and P.R. Jaffé, "Transport and Transformation of Poly- and Perfluoroalkyl Substances (PFAS) in Constructed Wetland Mesocosms as Coupled to the Feammox Process," to be presented at the 2022 AGU Fall Meeting, Chicago, December 2022.
- Sima, M., S. Huang, and P.R. Jaffé, "A Simple Kinetic Model Coupling the Feammox Process and PFAS Defluorination in *Acidimicrobium* sp. Strain A6," to be presented at the 2022 AGU Fall Meeting, Chicago, December 2022.
- Huang, S., C. Chen, M. Ruiz-Urigüen, and P.R. Jaffé, "Feammox: Anaerobic Ammonium Oxidation Coupled to Iron Reduction, from its Discovery to Applications," to be presented at the 2022 AGU Fall Meeting, Chicago, December 2022.
- Sima, M., S. Huang, and P.R. Jaffé, "Kinetics of Perfluorooctanoic Acid Biodegradation by *Acidimicrobium* sp. Strain A6 during the Feammox Process," American Society for Microbiology, (ASM) Microbe 2022, Washington, D.C., June 2022.
- Park, J., and P.R. Jaffé, "Defluorination of Perfluorooctanoic acid by *Acidimicrobium* sp. Strain A6 using polyacrylic acids-coated ferrihydrite as an electron acceptor," Middle Atlantic Regional Meeting (MARM) - American Chemical Society, June 2022.
- Smorada, C., and P.R. Jaffé, "Biodegradation of environmental levels of perfluorooctanoic acid by *Acidimicrobiacea* sp. strain A6 in the Neuse River and Cape Fear River," Middle Atlantic Regional Meeting (MARM) - American Chemical Society, June 2022.
- Llerena-Olivera, C., and P.R. Jaffé, "Continuous-flow microbial electrolysis cell reactor prototype with *Acidimicrobium* sp. strain A6," Middle Atlantic Regional Meeting (MARM) - American Chemical Society, June 2022.
- Sima M., and P.R. Jaffé, "The kinetics of perfluorooctanoic acid degradation as coupled with the Feammox process by *Acidimicrobium* sp. strain A6," Middle Atlantic Regional Meeting (MARM) - American Chemical Society, June 2022.
- Huang, S., P.R. Jaffé, and Trent Key, "Defluorination of Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic Acid (PFOS), and other Perfluoroalkyl Acids by *Acidimicrobium* sp. strain A6," May 2022, International Conference on Remediation of Chlorinated and Recalcitrant Compounds, in Palm Springs, CA.
- Huang, S., and P.R. Jaffé, "Expression of Reductive Dehalogenase Genes in *Acidimicrobium* sp. A6 during the Defluorination of PFAS," invited talk, ACS 2022 Spring Meeting (virtual), March 20-24, 2022.
- Ruiz-Urigüen, M., W. Shuai, S. Huang and P.R. Jaffé "Biodegradation of Perfluorooctanoic Acid by *Acidimicrobiaceae* sp. strain A6 in Anaerobic Microbial Electrolysis Cells," presented (virtual) at the 2021 AGU Fall Meeting, New Orleans, December 2021.
- Jaffé, P.R. "Harnessing the Novel Feammox Bacterium, *Acidimicrobium* sp. Strain A6, for PFAS Defluorination: The Path from Discovery to Applications," plenary talk (virtual), joint ICCEFA'21 (International Conference on Civil Engineering Fundamentals and Applications) ICESA'21 (International Conference for Engineering, Sciences and Applications) conference, November 21 - 23, 2021.
- Jaffé, P.R. "Defluorination of Perfluoro Alkyl Acids by *Acidimicrobium* sp. Strain A6: Identification of a Novel Dehalogenase and Applications for Remediation," plenary talk (virtual), IBBS18 (International Biodeterioration & Biodegradation Symposium), Sept. 7, 2021.
- Jaffé, P.R., S. Huang, J. Ge, J.W. Strothers, "Simultaneous dichlorination of 1,2,3 TCP and difluorination of PFOA by *Acidimicrobium* sp. strain A6," ACS 2021 Fall Meeting, August 22 - 26, 2021.
- Harper, E., V. Varaljay, M. Gross, A. Liptak, K. Taylor, H.B. Guo, S. Huang, G. Kedziora, R. Berry, P. Jaffé, N. Kelley-Loughnane, "Identification of per- and polyfluoroalkyl degrading enzymes via natural language processing models," ACS 2021 Fall Meeting, August 22 - 26, 2021.
- Jaffé, P.R., "Biotransformation and Potential Mineralization of PFOS, PFHxS, and PFOA by *Acidimicrobiaceae* sp. A6 under Iron Reducing Conditions," SERDP & ESTCP Project Meeting: PFAS Ecotoxicity, Analyses, Fate, Transport, Treatment, San Pedro, July 19-22, 2021.
- Jaffé, P.R., S. Huang, and M. Sima, "Linking the expression of a novel reductive dehalogenase gene to the defluorination of PFAS by *Acidimicrobium* sp. Strain A6," ACS 2021 Spring Meeting (virtual), April 5-16, 2021.



- Varaljay, V.A., E. Harper, K. Taylor, J.D. Harris, M. Gross, H.B. Guo, S. Huang, C. Hung, C. Williams, E.A. Almand, R. Berry<sup>1</sup>, P. Jaffe, J. J. Steel, and N. Kelley-Loughnane, "A Combined Bioinformatics and Machine Learning Approach for Biological Degradation of PFASs," ACS 2021 Spring Meeting (virtual), April 5-16, 2021.
- Jaffé, P.R., "Feammox: Oxidization of Ammonium under Iron Reducing Conditions by *Acidimicrobiaceae* sp. A6 and Potential Applications for Ammonium Removal and Cometabolic Degradation of Halogenated Organics," USNRL Chemistry Division Colloquium, January 21, 2021.
- Jaffé, P.R. and S. Huang, "Biotransformation and Potential Mineralization of PFOS, PFHxS, and PFOA by *Acidimicrobium* sp. A6 under Iron Reducing Conditions," 2020 SERDP+ESTCP Symposium.
- Berry, R., G. Kedziora, HB Guo, S. Huang, P. Jaffe, C. Hung, V. Varaljay, N. Kelley-Loughnane, "Multiscale Modeling of PFAS Biodegradation," 2020 SERDP+ESTCP Symposium.
- Varaljay, V.A., J.D. Harris, K. Taylor, E. Harper, C. Williams, M. Gross, C. Hung, S. Huang, R. Berry, J.J. Steel, E.A. Almand, P. Jaffe, and N. Kelley-Loughnane, "A bioinformatics approach to the development of novel biological degradation of PFASs," 2020 SERDP+ESTCP Symposium.
- Jaffé, P.R., "Defluorination of PFOA, PFOS, and Other Non-perfluorinated PFAS by *Acidimicrobium* sp. Strain A6 and the Identification of Novel Dehalogenases Responsible for this Process," Chemours Technology Meeting, May 20, 2020.
- Sherman, A., and P.R. Jaffé, "The Effects of Hurricane Flooding on Ammonium Oxidation in Agricultural Riparian Zones," presented at the 2019 AGU Fall Meeting, San Francisco, December 2019.
- Jaffé, P.R. and S. Huang, "Defluorination of PFAS via Ammonium Oxidation under Iron Reducing Conditions," plenary talk, 16<sup>th</sup> International Symposium on Persistent Toxic Substances (ISPTS), October 25 to 27, 2019.
- Jaffé, P.R. and S. Huang, "Defluorination of PFAS by *Acidimicrobiaceae* sp. A6 during Feammox Incubations," invited talk, ACS National Meeting San Diego, August 2019.
- Jaffé, P.R. and S. Huang, "Defluorination of PFAS and their Precursors via the Feammox Process," presented at the 2019 AEESP Research and Education Conference at ASU, May 14–16, 2019.
- Jaffé, P.R. and S. Huang, "Defluorination of PFAS via Feammox," presented at the NJWEA/AEES Workshop, Atlantic City, May 6, 2019.
- Jaffé, P.R. and S. Huang, "Defluorination of PFAS via Ammonium Oxidation under Iron Reducing Conditions," platform talk, 2019 RemTEC Summit, Denver, CO, February 26-28, 2019.
- Ruiz-Urigüen, M., W. Shuai, and P.R. Jaffe, "Electrode-colonizing Feammox Bacteria *Acidimicrobiaceae* sp. A6," Paper No. B23H-1890, presented at the 2018 Fall Meeting, AGU, Washington, D.C., 10-14 Dec.
- Sherman, A., and P.R. Jaffé, "Ammonium Oxidation and Selenium Reduction via Feammox in Neuse River Riparian Sediments," Paper No. B53K-2325, presented at the `
- Ge, J., S. Huang, P.R. Jaffé, "Biodegradation of selected aromatic organic compounds by the Feammox process," presented at the 2018 International Conference on the "Challenges in Environmental Science and Engineering" (CSE-2018), Thailand, Nov. 4-8, Bangkok, 2018.
- Kaplan, D.I., D. Li, S. Huang, P.R. Jaffé, J.C. Seaman, C. Xu, P.H. Santschi, A.C. Dohnalkova, N. Tolic, Ravi Kukkadapu, "Impact of the Unique Mineralogy and Organic Matter Composition of the Rhizosphere on Uranium immobilization," presented at the Clay Mineral Society Annual Meeting, Urbana-Champaign, IL, 11-14 June, 2018.
- Ruiz-Urigüen, D. Steingart, and P.R. Jaffé, "Electrodes as Terminal Electron Acceptors in Anaerobic Ammonium Oxidation," [Final paper number, B11A-1660] presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.
- Sherman, A., and P.R. Jaffé, "Bioreduction of Selenium Oxyanions via the Feammox Process," [Final paper number, B23D-2104] presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.
- Weitao Shuai, Peter R. Jaffé, "Enhancing the Process of Anaerobic Ammonium Oxidation Coupled to Iron Reduction in Constructed Wetland Mesocosms with Supplement of Ferric Iron Hydroxides [Final paper number, B23D-2087] presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.
- Bilgin, A., and P.R. Jaffé, "Copper (II) Removal In Anaerobic Continuous Column Reactor System By Using Sulfate Reducing Bacteria. Hydroxides," [Final paper number, H54E-01] presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.
- Jaffé, P.R., "Soil Remediation," Key Note, 10<sup>th</sup> World Congress of Chemical Engineering, Barcelona, Spain, October 1-5, 2017.
- Jaffé, P., J. Ge, E. Gilson, S. Huang, M. Ruiz, A. Sherman, W. Shuai, "Bioremediation of Selected Organic and Inorganic Pollutants During Ammonium Oxidation Under Iron Reduction," 10<sup>th</sup> World Congress of Chemical Engineering, Barcelona, Spain, October 1-5, 2017.

Jaffé, P.R., J. Ge, E. Gilson, S. Huang, M. Ruiz, A. Sherman, W. Shuai, “Exploring Novel Bioremediation Applications Based on the Feammox Process,” platform talk, RemTEC Summit, Denver, March 2017.

Lee, M., E. Shevliakova, S. Malyshev, P. C. D. Milly, P.R. Jaffé<sup>4</sup>, and C.A. Stock, “Increased climate variability and extremes amplify risks of coastal hypoxia worldwide: Implications of enhanced basin memory effects on river dissolved nitrogen in the GFDL Earth system modeling framework,” Extreme Climate Event Impacts on Aquatic Biogeochemical Cycles and Fluxes, AGU Chapman Conference, San Juan, Puerto Rico, January 2017.

Reid M.C., and P.R. Jaffé, “Characterizing Gas Transport in Wetland Soils with Dissolved Gas Tracer Techniques,” 2016 Fall Meeting Program, San Francisco.

Zhang, Z., H.S. Moon, S. Myneni, and P.R. Jaffe, “Effect of phosphate, iron and sulfate reduction on arsenic dynamics and bioaccumulation in constructed wetlands,” 2016 Fall Meeting Program, San Francisco.

Michael Pennino, M., R. McDonald, and P. Jaffe, “Watershed Scale Impacts of Stormwater Green Infrastructure on Hydrology, Nitrogen Fluxes, and Combined Sewer Overflows in the Baltimore, MD and Washington, DC area,” 2016 Fall Meeting Program, San Francisco.

Kaplan, D. I., J.C. Seaman, C. Xu, S. Huang, D. Li, R. Kukkadapu, P. Santschi, P., and P. Jaffe, “Organic and Mineralogical Properties of the Rhizosphere that Promote Uranium Binding in Wetland Soils,” ASA, CSSA & SSSA International Annual Meeting, 2016, American Society of Agronomy, Phoenix, AZ.

Kaplan, D., Xu C, P. Santschi, D. Li, J. Seaman, P. Jaffe, “Seasonal Changes in Uranium Porewater Chemistry in a Contaminated Wetland,” 26th Goldschmidt Conference, Yokohama, Japan, June 26-July 1, 2016.

Jaffé, P.R. and V. Razaviarani, “Denitrification of Nitric Oxide from Off-Gas Coking Plant Using Hollow Fiber Membrane,” 6th International Conference on Engineering for Waste and Biomass Valorization -May 23–26, 2016 – Albi, France.

Lee, M., E. Shevliakova, S. Malyshev, P. C. D. Milly, P.R. Jaffé, and C.A. Stock, “Climatic Variability and Extremes, Interacting with Nitrogen Storage, Amplify Risks of Coastal Eutrophication,” 2016 Ocean Sciences Meeting, New Orleans.

Pennino, M., P. Jaffe, R. McDonald, “Watershed Scale Impacts of Stormwater Green Infrastructure on Hydrology and Nutrient Fluxes in the Mid-Atlantic Region,” AGU 2015 Fall Meeting Program, San Francisco.

Ruiz Urigüen, M., P. Jaffe, Microbial Anaerobic Ammonium Oxidation Under Iron Reducing Conditions, Alternative Electron Acceptors,” AGU 2015 Fall Meeting Program, San Francisco.

Schafer, K., P. Jaffe, T. Morin, G. Bohrer, “Greenhouse Gas Balance in a Restored and Natural Wetland,” AGU 2015 Fall Meeting Program, San Francisco.

Zhang, Z., H.S. Moon, S. Myneni, P. Jaffe, “Effect of dissimilatory iron and sulfate reduction on arsenic dynamics in the wetland rhizosphere and its bioaccumulation in plants,” AGU 2015 Fall Meeting Program, San Francisco.

Huang, S., and P.R. Jaffé, “Influence of Environmental Factors on Feammox Activity in Soil Environments,” AGU 2015 Fall Meeting Program, San Francisco.

Gilson E., S. Huang, P.G. Koster van Groos, K. Scheckel, A.D. Peacock, D.I. Kaplan and P.R. Jaffé, “Fate of Uranium in Wetlands: Impact of Drought followed by Re-flooding,” 2015 Environmental System Science (ESS) Principal Investigators (PI) Meeting.

Pal, D.S. and P.R. Jaffé, “Modeling the Interaction of H<sub>2</sub> on Root Exudate Degradation and Methanogenesis in Wetlands,” EGU General Assembly, 2015, Vienna, Austria.

Huang, S., M. Ruiz-Urigüen, and P.R. Jaffé, “Ammonium Oxidation Under Iron Reducing Conditions: Environmental Factors Characterization and Process Optimization,” EGU General Assembly, 2015, Vienna, Austria.

Zhang, Z., H.S. Moon, S. Myneni, P.R. Jaffé, “Effect of Dissimilatory Iron and Sulfate Reduction on Arsenic Dynamics in the Wetland Rhizosphere and its Bioaccumulation in Plants,” EGU General Assembly, 2015, Vienna, Austria.

Schäfer, KVR, H.J. Renninger, D.S. Pal, and P.R. Jaffé, “Scaling greenhouse gas fluxes in a natural and restored wetland from microsites to ecosystem level,” EGU General Assembly, 2015, Vienna, Austria.

Huang, S., M. Ruiz-Urigüen, P.R. Jaffe, “Environmental Factors Affecting Ammonium Oxidation Under Iron Reducing Conditions,” AGU 2014 Fall Meeting Program, San Francisco.

Gilson, E., S. Huang, P. Kostervan Groos, K. Scheckel, A. Peacock, D. Kaplan, P. Jaffe, “Fate of Uranium in Wetlands: Impact of Drought Followed by Re-flooding,” AGU 2014 Fall Meeting Program, San Francisco.

Pal, D., and P. Jaffe, “Modeling the Interaction of H<sub>2</sub> on root Exudate Degradation and Methanogenesis in Wetland Sediments,” AGU 2014 Fall Meeting Program, San Francisco.

Schaefer, K., P. Jaffe, G. Bohrer, “Greenhouse Gas Fluxes in a Natural and Restored Wetland Before and After Hurricane Sandy,” AGU 2014 Fall Meeting Program, San Francisco.

- Jaffé, P.R., “Iron as an Electron Acceptor for Biogeochemical Transformations of Pollutants in Groundwater, Soils, and Engineered Systems,” Plenary Lecture on Environmental Engineering, 13th Mediterranean Congress of Chemical Engineering, Barcelona, Spain, 30 September to 3 October 2014.
- Chang, H., S.W. Buettner, J.C. Seaman, P.R. Jaffé, P.G. Koster van Groos, D. Li, A.D. Peacock, K. Scheckel, and D.I. Kaplan, “Critical Role of a Wetland Plant on Uranium Biogeochemistry in an Iron-Rich Reducing Condition,” 24<sup>th</sup> V.M. Goldschmidt Conference, Sacramento, CA, June 2014.
- ElBishlawi, H., Z. Xu, S. Myneni, P.R. Jaffé, “Fluoride Adsorption Using Novel Hydroxyapatite-coated Calcite: Synthesis, Modeling, and Simulation Studies”, NJ Water Environment Association Annual Conference, Atlantic City, NJ, May 2014.
- Pal, D. and P. Jaffe, “Measuring Subsurface H<sub>2</sub> Concentrations with Peepers to Predict H<sub>2</sub>/CH<sub>4</sub> Dependency in Tidal Wetland Sediments,” NJ Water Environment Association Annual Conference, Atlantic City, NJ, May 2014.
- Jaffé, P.R., P.G. Koster van Groos, D. Li, H.S. Chang, J.C. Seaman, D.I. Kaplan, A.D. Peacock, and K. Scheckel, “Uranium Immobilization in Wetland Soils,” EGU General Assembly, 2014, Vienna, Austria.
- Huang, S., M. Ruiz-Urigüen, P.R. Jaffé, “Studies on a Novel *Actinobacteria* Species Capable of Oxidizing Ammonium under Iron Reduction Conditions,” EGU General Assembly, 2014, Vienna, Austria.
- Lee, M., S. Malyshev, E. Shevliakova, P.R. Jaffé, “Perturbations to the River Nitrogen Cycling from the Historical Land Use and Climate Changes: the Susquehanna River Case Study with GFDL Land Model LM3-N,” AGU 2013 Fall Meeting Program, San Francisco.
- Chang, H., S.W. Buettner, J. C. Seaman, P.R. Jaffe, P.G. Koster van Groos, D. Li, A.D. Peacock, K. Scheckel, and D.I. Kaplan, “Uranium biogeochemistry in an iron-rich rhizosphere of a native wetland plant under reducing conditions,” ASA, CSSA, & SSSA International Annual Meetings. Tampa, FL Nov 3 – 6, 2013.
- Reid, M.C., D.S. Pal, and P.R. Jaffe, “Gas Exchange in the Wetland Rhizosphere: Quantifying Spatial and Temporal Variability at Field Scales with Dissolved Gas Tracer Experiments,” AGU Chapman Conference on Soil-mediated Drivers of Coupled Biogeochemical and Hydrological Processes Across Scales, Tucson, Arizona, October 2013.
- Pal, D.S., R. Tripathee, K.V.R. Schäfer, and P.R. Jaffé: “Determining relationships between dissolved Hydrogen and Methane porewater concentrations and static chamber flux measurements in vegetated wetland soils,” AGU Chapman Conference on Soil-mediated Drivers of Coupled Biogeochemical and Hydrological Processes Across Scales, Tucson, Arizona, October 2013.
- Abbassi, R., A. Kumar Yadav, S. Huang, P. Jaffe, H. Littleton, Y. Liu, “Energy and Chemical Efficient Nitrogen Removal with Mixed of Anammox and Low DO Sludge from MBR Plant using Membrane Bio-reactors,” WEFTEC, October 2013, Chicago IL.
- Huang, S., and P.R. Jaffe, “A newly identified microorganism affecting the N cycle: Ammonium oxidation in iron reducing soils,” 23<sup>rd</sup> V.M. Goldschmidt Conference, August 2013, Florence, Italy. *Mineralogical Magazine*, 77(5) 1339.
- Jaffé, P.R., “Iron as an electron acceptor for biogeochemical transformations of pollutants in groundwater and at the groundwater-surface water interface,” International Symposium on Ecohydrology and Groundwater Sustainability: Integrative approaches to mass exchange in groundwater-surface water interfaces, July 22-26, 2013, Seoul, Korea.
- Koster van Groos, P.G., D.I. Kaplan, H.S. Chang, A.D. Peacock, J.C. Seaman, and P.R. Jaffe, “Investigating uranium attenuation through wetland mesocosms,” International Conference on the Biogeochemistry of Trace Metals, June 16 – 20, 2013, Athens, GA.
- Li, D., D. I. Kaplan, J. C. Seaman, H. S. Chang, P. Koster van Groos, and P. Jaffe. 2013, “Sorption and chemical speciation of uranium onto SRS wetland sediments,” International Conference on the Biogeochemistry of Trace Metals, June 16 – 20, 2013, Athens, GA.
- Jaffé, P.R., P.G. Koster van Groos, D.I. Kaplan, H.S. Chang, A.D. Peacock, J.C. Seaman, and K.G. Scheckel, “Uranium Transport across Ground Water Surface Water Interfaces: Effect of Wetland Plants on the Sediment Biogeochemistry,” Joint DOE-TES/DOE-SBR PI Meeting, May 14-15, 2013.
- Jaffé, P.R., H. Tan, A. Peacock, K. Williams, Y. Wu, and P. Long, “Evolution of Methanogenesis during Biostimulation of Alluvial Sediments,” Joint DOE-TES/DOE-SBR PI Meeting, May 14-15, 2013.
- Reid, M.C., and P.R. Jaffe, “In-situ Measurements of Dissolved Gas Dynamics and Root Uptake in the Wetland Rhizosphere,” Geophysical Research Abstracts Vol. 15, EGU 2013-2449, 2013 EGU General Assembly Vienna, Austria, 07 – 12 April, 2013.
- Reid, M.C., R. Tripathee, D. Pal, K.V. Schafer, P.R. Jaffe, “Tidal Influences on Belowground Methane Dynamics in a Mesohaline Coastal Marsh,” AGU 2012 Fall Meeting Program, San Francisco.
- Tripathee, R., M.C. Reid, P.R. Jaffe, K.V. Schafer, “Methane Emission from a Restored Wetland at New Jersey Meadowlands, North East USA,” AGU 2012 Fall Meeting Program, San Francisco.

- Jaffe, P.R., A. Xiang, B.E. Koel, "Transport in Porous Media of Poly(Acrylic Acid) Coated Ferrihydrite Nanoparticles," AGU 2012 Fall Meeting Program, San Francisco.
- ElBishlawi, H., P. Jaffe, J.Y. Shin, "Trace metal immobilization in tidal brackish marshes: Comparing newly constructed and naturally established sediments," 4<sup>th</sup> International Ecosummit, Ecological Sustainability, Restoring the planets Ecosystem Services, Columbus, OH, Sept 30 – Oct.5, 2012.
- Reid, M.C., P.R. Jaffe, "Pathways for volatilization from the wetland rhizosphere," 4<sup>th</sup> International Ecosummit, Ecological Sustainability, Restoring the planets Ecosystem Services, Columbus, OH, Sept 30 – Oct.5, 2012.
- Schafer, K.V.R., G. Bohrer, M. Reid, R. Tripathee, P. Jaffe, "Temporal and spatial dynamics of methane fluxes in a temperate urban wetland," 4<sup>th</sup> International Ecosummit, Ecological Sustainability, Restoring the planets Ecosystem Services, Columbus, OH, Sept 30 – Oct.5, 2012.
- Reid, M.C., K.V.R. Schafer, R. Tripathee, P.R. Jaffe, "Linking porewater dynamics and atmospheric fluxes of methane in a tidal estuarine marsh," 4<sup>th</sup> International Ecosummit, Ecological Sustainability, Restoring the planets Ecosystem Services, Columbus, OH, Sept 30 – Oct.5, 2012.
- Xiang, A., B.E. Koel, P.R. Jaffe "Polymer Coating for Improved Delivery of Iron Oxide Nanoparticles in Ground Water," American Chemical Society National Meeting, Philadelphia, PA, August 2012.
- Tribout, C., P. Jaffe, A. Nzihou, B. Husson, "Assessment of Heavy Metals Release from Secondary Road Materials Using Percolation Test," 4<sup>th</sup> international Conference on Engineering for Waste and Biomas Valorisation, Sept. 10-13, 2012, Porto, Portugal.
- Jaffe, P.R., M. Barlett, L. Kerkhoff, P.E. Long, D. Lovley, L., McGuinness, H.S S. Moon., H. Tan, K.H. Williams, "Electron Donor Utilization During the Bioreduction of Uranium," 22<sup>nd</sup> V.M. Goldschmidt Conference, June 2012, Mont Real, Canada.
- Schäfer, K.V.R., R. Tripathee, W. Alcivar, G. Bohrer, P. Jaffe, M. Reid, "Methane Fluxes in Temperate Urban Wetlands," NSF CBET Grantees Conference, June 6 - 8, 2012, Baltimore, MD.
- Lee, M., S. Malyshev, E. Shevliakova, P. Jaffe, "Adapting a Dynamic Land Model, LM3V, to Simulate Nitrogen Exports and Transformations in the Susquehanna River," Chesapeake Modeling Symposium 2012, May 21, 22, Annapolis MD.
- Jaffe, P.R., P. Koster van Groos, D.I. Kaplan, A.D. Peacock, K. Scheckel, H.S. Chang, "Fate of Uranium During Transport Across the Groundwater–Surface Water Interface," DOE Subsurface Biogeochemical Research Meeting. Washington, D.C. April 2012.
- Long P., K. Williams, J. Banfield, K. Wrighton, K. Handley, J. Bargar, D. Lovley, M. Lipton, Mike Wilkins, S. Yabusaki, C. Murray, R. Hettich, N. VerBerkmoes, J. Davis, P. Fox, B. Luef, L. Comolli, S. Fakra, P. Jaffe, "Manipulating Uranium Desorption and Redox Status in an Alluvial Aquifer: Overview of *In Situ* Electron Donor and Bicarbonate Amendment," Experiments at the Rifle, Colorado IFRC," DOE Subsurface Biogeochemical Research Meeting. Washington, D.C. April 2012.
- Jaffe, P., H. Tan, L. Kerkhof, L. McGuinness, A. Peacock, K. Williams, P. Long, "Impact of Biostimulation on Permeability and C-13 Stable Isotope Probing of Biostimulation Experiments to Identify Acetate Utilizers," DOE Subsurface Biogeochemical Research Meeting. Washington, D.C. April 2012.
- Jaffe, P.R., H. Tan, H.S. Moon, L.J. Kerkhof, L.R. McGuinness, A.D. Peacock, R. Kukkadapu, M. Barlett, P. E. Long, "The effect of iron, sulfate, and electron donors on the activity of *Geobacter sp.* during the bioreduction of U(VI)," Uranium biogeochemistry: transformations and applications, International Workshop, March 11-16, 2012, Monte Verita, Ascona Switzerland.
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