

CURRICULUM VITAE

PETER R. JAFFE

William L. Knapp '47 Professor of Civil Engineering
Professor of Civil and Environmental 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 – present.
- * 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 :

- * Excellent International Cooperation Project Award, “Application of Feammox 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 to 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:

- * “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:

- Huang, S, and P.R. Jaffé, "Oxidation of Ammonium by Feammox *Acidimicrobiaceae* sp. A6 via a Novel Feammox Oxygenase," in preparation.
- Huang, S, and P.R. Jaffé, "Draft Genome Sequencing and Comparative Analysis of Feammox *Acidimicrobiaceae* sp. A6, a Novel *Acidimicrobiaceae* Member," in preparation.
- 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," submitted.
- 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. Jaffe, and J. Casas, "Selective reduction of nitrate to N₂ using ilmenite as a low-cost photo-catalyst," *Applied Catalysis B: Environmental*, 2019, 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. Jaffe, "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/ijlse.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>.
- Razaviaran, 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 Trichloethylene 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 CH₄ and H₂ 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 H₂ 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. Jaffé, "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. Jaffé, P. Koster van Groos, K. Scheckel, C. Segre, N. Chen, D.T. Jiang, M. Newville, A. Lanzirotti, "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).
- Chang, H., S. Buettner, J. Seaman, P.R. Jaffé, P. Koster van Groos, D. Li, A. Peacock, K., Scheckel, D. Kaplan, "Uranium Immobilization in an Iron-rich Rhizosphere of a Native Wetland Plant from the Savannah River Site under Reducing Conditions," *Environmental Science and Technology*, 2014, 48 (16), pp. 9270–9278. [doi: 10.1021/es5015136](https://doi.org/10.1021/es5015136).
- Pal, D.S., M.C. Reid, and P.R. Jaffé, "Impact of Hurricane Sandy on CH₄ Released from Vegetated and Unvegetated Wetland Microsites," *Environmental Science and Technology Letters*, 1, 2014, pp. 372-375, [doi: 10.1021/es5015136](https://doi.org/10.1021/es5015136).

[10.1021/ez5002215](https://doi.org/10.1021/ez5002215).

- Huang, S., and P.R. Jaffé, "Identification of an *Actinobacteria* Species Capable to Oxidize Ammonium under Iron Reducing Conditions," *Biogeosciences Discussions*, 11, 12295-12321, [doi: 10.5194/bgd-11-12295-2014](https://doi.org/10.5194/bgd-11-12295-2014), 2014.
- Lee, M., S. Malyshev, E. Shevliakova, P. C. D. Milly, and P.R. Jaffé, "Capturing Interactions between Nitrogen and Hydrological Cycles under Historical Climate and Land Use: Susquehanna Watershed Analysis with the GFDL Land Model LM3-TAN," *Biogeosciences*, 11, 2014, 5809-5826, [doi: 10.5194/bg-11-5809-2014](https://doi.org/10.5194/bg-11-5809-2014) (also *Biogeosciences Discussions*, 11, 5669-5710, doi:10.5194/bgd-11-5669-2014, 2014).
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II. Non-Refereed Publications

i. Technical Reports, Book Chapters, Articles:

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ii. Conference Presentations with Abstracts:

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