# John M Zachara

List of Publications by Year
in descending order



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|---|---|---|---|
| 85 papers | 8,567 citations | 66234<br>42 h-index | 54797<br>84 g-index |
| 88 all docs | 88 docs citations | 88 times ranked | 6053 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Biogenic iron mineralization accompanying the dissimilatory reduction of hydrous ferric oxide by a groundwater bacterium. Geochimica Et Cosmochimica Acta, 1998, 62, 3239-3257. | 1.6 | 712 |
| 2 | Microbial Reduction of Crystalline Iron(III) Oxides:Â Influence of Oxide Surface Area and Potential for Cell Growth. Environmental Science & Technology, 1996, 30, 1618-1628. | 4.6 | 711 |
| 3 | Respiration of metal (hydr)oxides byShewanellaandGeobacter: a key role for multihaemc-type cytochromes. Molecular Microbiology, 2007, 65, 12-20. | 1.2 | 592 |
| 4 | Characterization of an electron conduit between bacteria and the extracellular environment. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 22169-22174. | 3.3 | 410 |
| 5 | Bacterial reduction of crystalline Fe (super 3+) oxides in single phase suspensions and subsurface materials. American Mineralogist, 1998, 83, 1426-1443. | 0.9 | 324 |
| 6 | Reduction of U(VI) in goethite (Î±-FeOOH) suspensions by a dissimilatory metal-reducing bacterium. Geochimica Et Cosmochimica Acta, 2000, 64, 3085-3098. | 1.6 | 309 |
| 7 | Structure of a bacterial cell surface decaheme electron conduit. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 9384-9389. | 3.3 | 301 |
| 8 | The effect of calcium on aqueous uranium(VI) speciation and adsorption to ferrihydrite and quartz. Geochimica Et Cosmochimica Acta, 2006, 70, 1379-1387. | 1.6 | 246 |
| 9 | Solubilization of Fe(III) oxide-bound trace metals by a dissimilatory Fe(III) reducing bacterium. Geochimica Et Cosmochimica Acta, 2001, 65, 75-93. | 1.6 | 223 |
| 10 | The â€˜porinâ€“cytochromeâ€™ model for microbeâ€toâ€mineral electron transfer. Molecular Microbiology, 2012, 85, 201-212. | 1.2 | 222 |
| 11 | Expanding the role of reactive transport models in critical zone processes. Earth-Science Reviews, 2017, 165, 280-301. | 4.0 | 207 |
| 12 | Molecular Underpinnings of Fe(III) Oxide Reduction by Shewanella Oneidensis MR-1. Frontiers in Microbiology, 2012, 3, 50. | 1.5 | 186 |
| 13 | Reduction of TcO4âˆ’ by sediment-associated biogenic Fe(II). Geochimica Et Cosmochimica Acta, 2004, 68, 3171-3187. | 1.6 | 184 |
| 14 | Rapid electron exchange between surface-exposed bacterial cytochromes and Fe(III) minerals. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 6346-6351. | 3.3 | 179 |
| 15 | A transâ€outer membrane porinâ€cytochrome protein complex for extracellular electron transfer by <scp><i>G</i></scp><i>eobacter sulfurreducens</i>â€…<scp>PCA</scp>. Environmental Microbiology Reports, 2014, 6, 776-785. | 1.0 | 178 |
| 16 | Reduction of pertechnetate [Tc(VII)] by aqueous Fe(II) and the nature of solid phase redox products. Geochimica Et Cosmochimica Acta, 2007, 71, 2137-2157. | 1.6 | 154 |
| 17 | Mtr extracellular electron-transfer pathways in Fe(III)-reducing or Fe(II)-oxidizing bacteria: a genomic perspective. Biochemical Society Transactions, 2012, 40, 1261-1267. | 1.6 | 150 |
| 18 | Kinetic Desorption and Sorption of U(VI) during Reactive Transport in a Contaminated Hanford Sediment. Environmental Science & Technology, 2005, 39, 3157-3165. | 4.6 | 137 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Persistence of uranium groundwater plumes: Contrasting mechanisms at two DOE sites in the groundwaterâ€"river interaction zone. Journal of Contaminant Hydrology, 2013, 147, 45-72. | 1.6 | 136 |
| 20 | Changes in Uranium Speciation through a Depth Sequence of Contaminated Hanford Sediments. Environmental Science & Technology, 2006, 40, 2517-2524. | 4.6 | 135 |
| 21 | Scaleâ€dependent desorption of uranium from contaminated subsurface sediments. Water Resources Research, 2008, 44, . | 1.7 | 123 |
| 22 | Dissolution of uranyl microprecipitates in subsurface sediments at Hanford Site, USA. Geochimica Et Cosmochimica Acta, 2004, 68, 4519-4537. | 1.6 | 110 |
| 23 | Influences of organic carbon speciation on hyporheic corridor biogeochemistry and microbial ecology. Nature Communications, 2018, 9, 585. | 5.8 | 110 |
| 24 | Geochemical Processes Controlling Migration of Tank Wastes in Hanford's Vadose Zone. Vadose Zone Journal, 2007, 6, 985-1003. | 1.3 | 109 |
| 25 | Redox Reactions of Reduced Flavin Mononucleotide (FMN), Riboflavin (RBF), and Anthraquinone-2,6-disulfonate (AQDS) with Ferrihydrite and Lepidocrocite. Environmental Science & Technology, 2012, 46, 11644-11652. | 4.6 | 98 |
| 26 | Uranium Speciation As a Function of Depth in Contaminated Hanford Sediments - A Micro-XRF, Micro-XRD, and Micro- And Bulk-XAFS Study. Environmental Science & Technology, 2009, 43, 630-636. | 4.6 | 90 |
| 27 | Kinetics of Reduction of Fe(III) Complexes by Outer Membrane Cytochromes MtrC and OmcA of<i>Shewanella oneidensis</i>MR-1. Applied and Environmental Microbiology, 2008, 74, 6746-6755. | 1.4 | 89 |
| 28 | Kinetics of Uranium(VI) Desorption from Contaminated Sediments: Effect of Geochemical Conditions and Model Evaluation. Environmental Science & Technology, 2009, 43, 6560-6566. | 4.6 | 89 |
| 29 | Kinetics of Reductive Dissolution of Hematite by Bioreduced Anthraquinone-2,6-disulfonate. Environmental Science & Technology, 2007, 41, 7730-7735. | 4.6 | 80 |
| 30 | Newly recognized hosts for uranium in the Hanford Site vadose zone. Geochimica Et Cosmochimica Acta, 2009, 73, 1563-1576. | 1.6 | 80 |
| 31 | Poreâ€scale and multiscale numerical simulation of flow and transport in a laboratoryâ€scale column. Water Resources Research, 2015, 51, 1023-1035. | 1.7 | 79 |
| 32 | Effect of Water Chemistry and Hydrodynamics on Nitrogen Transformation Activity and Microbial Community Functional Potential in Hyporheic Zone Sediment Columns. Environmental Science & Technology, 2017, 51, 4877-4886. | 4.6 | 79 |
| 33 | Internal Domains of Natural Porous Media Revealed: Critical Locations for Transport, Storage, and Chemical Reaction. Environmental Science & Technology, 2016, 50, 2811-2829. | 4.6 | 76 |
| 34 | Hydrogenaseâ€•and outer membrane <i>c</i>â€type cytochromeâ€facilitated reduction of technetium(VII) by <i>Shewanella oneidensis</i> MRâ€1. Environmental Microbiology, 2008, 10, 125-136. | 1.8 | 74 |
| 35 | Cryogenic Laser Induced U(VI) Fluorescence Studies of a U(VI) Substituted Natural Calcite:Â Implications to U(VI) Speciation in Contaminated Hanford Sediments. Environmental Science & Technology, 2005, 39, 2651-2659. | 4.6 | 73 |
| 36 | Drought Conditions Maximize the Impact of Highâ€Frequency Flow Variations on Thermal Regimes and Biogeochemical Function in the Hyporheic Zone. Water Resources Research, 2018, 54, 7361-7382. | 1.7 | 63 |

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|---|---|---|---|
| 37 | Effect of Grain Size on Uranium(VI) Surface Complexation Kinetics and Adsorption Additivity. Environmental Science & Technology, 2011, 45, 6025-6031. | 4.6 | 60 |
| 38 | Oxidative dissolution potential of biogenic and abiogenic TcO2 in subsurface sediments. Geochimica Et Cosmochimica Acta, 2009, 73, 2299-2313. | 1.6 | 54 |
| 39 | Scale-dependent rates of uranyl surface complexation reaction in sediments. Geochimica Et Cosmochimica Acta, 2013, 105, 326-341. | 1.6 | 54 |
| 40 | Utility of bromide and heat tracers for aquifer characterization affected by highly transient flow conditions. Water Resources Research, 2012, 48, . | 1.7 | 51 |
| 41 | Geochemical Controls on Contaminant Uranium in Vadose Hanford Formation Sediments at the 200 Area and 300 Area, Hanford Site, Washington. Vadose Zone Journal, 2007, 6, 1004-1017. | 1.3 | 50 |
| 42 | Competitive Reduction of Pertechnetate (<sup>99</sup>TcO<sub>4</sub><sup>âˆ’</sup>) by Dissimilatory Metal Reducing Bacteria and Biogenic Fe(II). Environmental Science & Technology, 2011, 45, 951-957. | 4.6 | 48 |
| 43 | Multispecies diffusion models: A study of uranyl species diffusion. Water Resources Research, 2011, 47, . | 1.7 | 43 |
| 44 | Quantifying Differences in the Impact of Variable Chemistry on Equilibrium Uranium(VI) Adsorption Properties of Aquifer Sediments. Environmental Science & Technology, 2011, 45, 8733-8740. | 4.6 | 42 |
| 45 | River stage influences on uranium transport in a hydrologically dynamic groundwaterâ€surface water transition zone. Water Resources Research, 2016, 52, 1568-1590. | 1.7 | 42 |
| 46 | Reductive dissolution of goethite and hematite by reduced flavins. Geochimica Et Cosmochimica Acta, 2013, 121, 139-154. | 1.6 | 41 |
| 47 | Effects of soluble flavin on heterogeneous electron transfer between surface-exposed bacterial cytochromes and iron oxides. Geochimica Et Cosmochimica Acta, 2015, 163, 299-310. | 1.6 | 41 |
| 48 | Threeâ€dimensional Bayesian geostatistical aquifer characterization at the Hanford 300 Area using tracer test data. Water Resources Research, 2012, 48, . | 1.7 | 40 |
| 49 | Regulation-Structured Dynamic Metabolic Model Provides a Potential Mechanism for Delayed Enzyme Response in Denitrification Process. Frontiers in Microbiology, 2017, 8, 1866. | 1.5 | 40 |
| 50 | Fe(II)- and sulfide-facilitated reduction of 99Tc(VII)O4âˆ’ in microbially reduced hyporheic zone sediments. Geochimica Et Cosmochimica Acta, 2014, 136, 247-264. | 1.6 | 39 |
| 51 | Dam Operations and Subsurface Hydrogeology Control Dynamics of Hydrologic Exchange Flows in a Regulated River Reach. Water Resources Research, 2019, 55, 2593-2612. | 1.7 | 39 |
| 52 | Application of ensemble-based data assimilation techniques for aquifer characterization using tracer data at Hanford 300 area. Water Resources Research, 2013, 49, 7064-7076. | 1.7 | 37 |
| 53 | Characterization of a contaminated wellfield using 3D electrical resistivity tomography implemented with geostatistical, discontinuous boundary, and known conductivity constraints. Geophysics, 2012, 77, EN85-EN96. | 1.4 | 36 |
| 54 | Determining individual mineral contributions to U(VI) adsorption in a contaminated aquifer sediment: A fluorescence spectroscopy study. Geochimica Et Cosmochimica Acta, 2011, 75, 2965-2979. | 1.6 | 35 |

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|---|---|---|---|
| 55 | The effect of biogenic Fe(II) on the stability and sorption of Co(II)EDTA2â˘ to goethite and a subsurface sediment. Geochimica Et Cosmochimica Acta, 2000, 64, 1345-1362. | 1.6 | 34 |
| 56 | The mineralogic transformation of ferrihydrite induced by heterogeneous reaction with bioreduced anthraquinone disulfonate (AQDS) and the role of phosphate. Geochimica Et Cosmochimica Acta, 2011, 75, 6330-6349. | 1.6 | 33 |
| 57 | Fourâ€dimensional electrical conductivity monitoring of stageâ€driven river water intrusion: Accounting for water table effects using a transient mesh boundary and conditional inversion constraints. Water Resources Research, 2015, 51, 6177-6196. | 1.7 | 33 |
| 58 | Nitrate bioreduction in redox-variable low permeability sediments. Science of the Total Environment, 2016, 539, 185-195. | 3.9 | 32 |
| 59 | A geostatisticsâ€informed hierarchical sensitivity analysis method for complex groundwater flow and transport modeling. Water Resources Research, 2017, 53, 4327-4343. | 1.7 | 30 |
| 60 | Influence of calcite on uranium(VI) reactive transport in the groundwaterâ€"river mixing zone. Journal of Contaminant Hydrology, 2014, 156, 27-37. | 1.6 | 29 |
| 61 | Characterizing particleâ€scale equilibrium adsorption and kinetics of uranium(VI) desorption from Uâ€contaminated sediments. Water Resources Research, 2013, 49, 1163-1177. | 1.7 | 27 |
| 62 | Transient groundwater chemistry near a river: Effects on U(VI) transport in laboratory column experiments. Water Resources Research, 2011, 47, . | 1.7 | 26 |
| 63 | Coupling a three-dimensional subsurface flow and transport model with a land surface model to simulate streamâ€"aquiferâ€"land interactions (CPÂv1.0). Geoscientific Model Development, 2017, 10, 4539-4562. | 1.3 | 25 |
| 64 | Resupply mechanism to a contaminated aquifer: A laboratory study of U(VI) desorption from capillary fringe sediments. Geochimica Et Cosmochimica Acta, 2010, 74, 5155-5170. | 1.6 | 24 |
| 65 | Importance of considering intraborehole flow in solute transport modeling under highly dynamic flow conditions. Journal of Contaminant Hydrology, 2011, 123, 11-19. | 1.6 | 23 |
| 66 | Using Bayesian Networks for Sensitivity Analysis of Complex Biogeochemical Models. Water Resources Research, 2019, 55, 3541-3555. | 1.7 | 23 |
| 67 | Assessment of controlling processes for field-scale uranium reactive transport under highly transient flow conditions. Water Resources Research, 2014, 50, 1006-1024. | 1.7 | 22 |
| 68 | Delineating Facies Spatial Distribution by Integrating Ensemble Data Assimilationand Indicator Geostatistics With Levelâ€Set Transformation. Water Resources Research, 2019, 55, 2652-2671. | 1.7 | 22 |
| 69 | Development of a proteoliposome model to probe transmembrane electron-transfer reactions. Biochemical Society Transactions, 2012, 40, 1257-1260. | 1.6 | 20 |
| 70 | Kilometerâ€Scale Hydrologic Exchange Flows in a Gravel Bed River Corridor and Their Implications to Solute Migration. Water Resources Research, 2020, 56, e2019WR025258. | 1.7 | 19 |
| 71 | Redox transformation and reductive immobilization of Cr(VI) in the Columbia River hyporheic zone sediments. Journal of Hydrology, 2017, 555, 278-287. | 2.3 | 18 |
| 72 | Riverbed Hydrologic Exchange Dynamics in a Large Regulated River Reach. Water Resources Research, 2018, 54, 2715-2730. | 1.7 | 17 |

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|---|---|---|---|
| 73 | Investigation of U(VI) Adsorption in Quartzâ€“Chlorite Mineral Mixtures. Environmental Science & Technology, 2014, 48, 7766-7773. | 4.6 | 16 |
| 74 | Targeted quantification of functional enzyme dynamics in environmental samples for microbially mediated biogeochemical processes. Environmental Microbiology Reports, 2017, 9, 512-521. | 1.0 | 16 |
| 75 | Establishing a geochemical heterogeneity model for a contaminated vadose zone â€" Aquifer system. Journal of Contaminant Hydrology, 2013, 153, 122-140. | 1.6 | 15 |
| 76 | <sup>99</sup>Tc(VII) Retardation, Reduction, and Redox Rate Scaling in Naturally Reduced Sediments. Environmental Science & Technology, 2015, 49, 13403-13412. | 4.6 | 15 |
| 77 | Long-term kinetics of uranyl desorption from sediments under advective conditions. Water Resources Research, 2014, 50, 855-870. | 1.7 | 14 |
| 78 | Pore-Scale Characterization of Biogeochemical Controls on Iron and Uranium Speciation under Flow Conditions. Environmental Science & Technology, 2012, 46, 7992-8000. | 4.6 | 12 |
| 79 | A New Approach to Quantify Shallow Water Hydrologic Exchanges in a Large Regulated River Reach. Water (Switzerland), 2017, 9, 703. | 1.2 | 12 |
| 80 | River Dynamics Control Transit Time Distributions and Biogeochemical Reactions in a Damâ€Regulated River Corridor. Water Resources Research, 2020, 56, e2019WR026470. | 1.7 | 12 |
| 81 | Modulating factors of hydrologic exchanges in a largeâ€scale river reach: Insights from threeâ€dimensional computational fluid dynamics simulations. Hydrological Processes, 2018, 32, 3446-3463. | 1.1 | 11 |
| 82 | Using Ensemble Data Assimilation to Estimate Transient Hydrologic Exchange Flow Under Highly Dynamic Flow Conditions. Water Resources Research, 2022, 58, . | 1.7 | 10 |
| 83 | Characterizing Technetium in Subsurface Sediments for Contaminant Remediation. ACS Earth and Space Chemistry, 2018, 2, 1145-1160. | 1.2 | 8 |
| 84 | Microbial Redox Proteins and Protein Complexes for Extracellular Respiration. , 2015, , 187-216. | | 2 |
| 85 | Understanding Contaminant Migration Within a Dynamic River Corridor Through Field Experiments and Reactive Transport Modeling. Frontiers in Water, 2020, 2, . | 1.0 | 2 |