

**PEGGY A. O'DAY**  
Professor and Founding Faculty  
Life and Environmental Sciences Department  
School of Natural Sciences, University of California, Merced  
5200 North Lake Road, Merced, CA 95343 USA  
voice: (209) 228-4338; email: [poday@ucmerced.edu](mailto:poday@ucmerced.edu)

## **EDUCATION**

Ph.D. Stanford University, Stanford, CA, Applied Earth Sciences  
M.S. Cornell University, Ithaca, NY, Geological Sciences  
B.S. University of California, Davis, CA, Geology, with Honors

## **EXPERIENCE**

2005-present: Professor and Founding Faculty, University of California, Merced  
2016-2019: Chair, Life and Environmental Sciences Department, University of California, Merced  
2013-2016: Chair, Environmental Systems Graduate Group, University of California, Merced  
2003-2005: Associate Professor and Founding Faculty, University of California, Merced  
2002-2003: Department of Chemistry and Biochemistry, Arizona State University, 50% appointment  
2000-2003: Associate Professor, Department of Geological Sciences, Arizona State University  
2000-2001: Visiting Scientist, Lawrence Livermore National Laboratory, Livermore, CA  
1994-2000: Assistant Professor, Geology Department, Arizona State University, AZ  
1992-1994: Post-Doctoral Research Fellow, University of California, Berkeley, CA

## **RESEARCH INTERESTS**

Aqueous, environmental, and mineral surface geochemistry; chemistry, reaction, and transport of inorganic contaminants and nutrients in natural systems; geochemical applications of spectroscopy and microscopy, particularly synchrotron X-ray methods; speciation, sorption, and reactive transport modeling; novel remediation methods for surface and subsurface metal and metalloid contaminants; chemical speciation of metals and health impacts of airborne particulate matter.

## **AWARDS**

Remarkable Women of the University of California, Merced, 2020  
Spiess Award for Distinguished Academic Senate Service, UC Merced, 2014  
Adrian Smith Lectureship on Environmental Geochemistry, University of Waterloo, 2014  
Mineralogical Society of America, Fellow, elected 2009  
Guest Lecturer, Goldschmidt Conference, Geochemical Society, Copenhagen DK, 2004  
National Science Foundation, Faculty Early Career Award, 1996-2000  
Mineralogical Society of America, National Visiting Lecturer, 1995-1996  
National Science Foundation, Post-doctoral Research Fellow, Earth Sciences, 1992-1994

## **PROFESSIONAL ORGANIZATIONS**

AAAS  
American Chemical Society  
American Geophysical Union  
Geochemical Society  
International XAFS Society  
Mineralogical Society of America

## PUBLICATIONS

## Journal Articles (peer-reviewed)

‡graduate student advisee; §postdoctoral mentee; \*corresponding author

- §\*Pattammattel, A., Tappero, R., Gavrilov, D., Zhang, H., ‡Aronstein, P., Forman, H. J., O'Day, P. A., Yan, H., and Chu, Y. S. (in review) Multimodal X-ray nano-spectromicroscopy analysis of chemically heterogeneous systems, *Metallomics*.
- Tran, V., ‡Helmrich, S., Quinn, N. W. T., and O'Day, P. A. (accepted) Operationalizing real-time monitoring data in simulation models using the public domain, *ASCE Journal of Water Resources Planning and Management*.
- Perdrial, N., Vazquez-Ortega, A., §Reinoso-Maset, E., O'Day, P. A. and Chorover, J., (2022) Effects of flow on uranium speciation in soils impacted by acidic waste fluids. *Journal of Environmental Radioactivity*. 251–252, 106955. <https://doi.org/10.1016/j.jenvrad.2022.106955>
- \*O'Day, P. A., §Pattammattel, A., ‡Aronstein, P., Leppert, V. J., and Forman, H. J. (2022) Iron speciation in respirable particulate matter and implications for human health, *Environmental Science & Technology*, **56**(11), 7006–7016, DOI: 10.1021/acs.est.1c06962.
- ‡\*Helmrich, S., Alpers, C. N., Vlassopoulos, D., and O'Day, P. A. (2021) Critical review of mercury methylation and methylmercury demethylation rate constants in aquatic sediments for biogeochemical modeling. *Critical Reviews in Environmental Science and Technology*, 1-26. DOI: 10.1080/10643389.2021.2013073.
- Seelos, M., ‡Rivas Meraz, E., Beutel, M., Traina, S.J., Furhmann, B., Burnistrova, J., Vlassopoulos, D., O'Day, P.A. (2021) Evaluation of manganese oxide amendments for mercury remediation in contaminated aquatic sediments. *ACS ES&T Engineering* **1**(12), 1688–1697 /doi.org/10.1021/acsestengg.1c00267.
- Vazquez-Ortega, A., Perdrial, N., §Reinoso-Maset, E., ‡Root, R. A., O'Day, P. A. and Chorover, J., (2021) Dissolved carbonate and pH control the dissolution of uranyl phosphate minerals in flow-through porous media. *Journal of Hazardous Materials*, **416**, 126240.
- Fuhrmann, B. C., Beutel, M. W., O'Day, P. A., Tran, C., Funk, A., Brower, S., Pasek, J., and Seelos, M. (2021) Effects of mercury, organic carbon, and microbial inhibition on methylmercury cycling at the profundal sediment-water interface of a sulfate-rich hypereutrophic reservoir. *Environmental Pollution* **268**, 115853.
- §Pattammattel, A., Leppert, V. J., ‡Aronstein, P., Robinson, M., Mousavi, A., Sioutas, C., Forman, H. J., and \*O'Day, P. A. (2021) Iron speciation in particulate matter (PM<sub>2.5</sub>) from urban Los Angeles using spectro-microscopy methods, *Atmospheric Environment* **245**, 117988.
- §\*Asta, M. P., Beller, H. R., and O'Day, P. A. (2020) Anaerobic dissolution rates of U(IV)-oxide by abiotic and nitrate-dependent bacterial pathways. *Environmental Science & Technology*, **54**(13), 8010-8021.
- §\*Reinoso-Maset, E., Perdrial, N., Steefel, C.I., Um, W., Chorover, J., and O'Day, P. A. (2020) Dissolved carbonate and pH control the dissolution of uranyl phosphate minerals in flow-through porous media. *Environmental Science & Technology*, **54**(10), 6031-6042.
- \*O'Day, P. A., §Nwosu, U. G., Barnes, M. E., Hart, S. C., Berhe, A. A., Christensen, J. N., and Williams, K. H., (2020) Phosphorus speciation in atmospherically deposited particulate matter and implications for terrestrial ecosystem productivity, *Environmental Science & Technology* **54**(8), 4984-4994.

- Watts, H. D., \*O'Day, P. A., and \*Kubicki, J. D. (2019) Gibbsite (100) and kaolinite (100) sorption of cadmium (II): A density functional theory and XANES study of structures and energies, *Journal of Physical Chemistry A* **123**, 29, 6319-6333.
- §\*Pattammattel, A., Leppert, V.J, Zhang, H., Forman, H. J., and \*O'Day, P. A. (2019) Surface oxidation and iron speciation on synthetic carbon nanoparticles: A model system for particulate air pollution studies, *Environmental Science -- Processes & Impacts* **21**, 548-563.
- ‡Leven, A., Vlassopoulos, D., Goin, J., Kanematsu, M., and \*O'Day, P. A. (2018) Characterization of manganese oxide amendments for *in situ* remediation of mercury-contaminated sediments, *Environmental Science -- Processes & Impacts* **20**, 1761-1773.
- Vlassopoulos, D., Kanematsu, M., Goin, J., ‡Leven, A., Henry, E., Glaser, D., Brown, S., and O'Day, P. A. (2018) Suppression of methylmercury production in sediments by manganese(IV) oxide amendments. *Environmental Sciences -- Processes & Impacts* **20**, 1746-1760.
- Perdrial, N., Vazquez-Ortega A., Wang, G., §Kanematsu, M., Mueller, K. T., Um, W., Steefel, C., O'Day, P. A., and Chorover, J. (2018) Uranium speciation in acid waste-weathered sediments: The role of aging and phosphate amendments, *Applied Geochemistry* **89**, 109-120.
- §\*Reinoso-Maset, E., Steefel, C., Um, W., Chorover, J., and O'Day, P. A. (2017) Rates and mechanisms of uranyl oxyhydroxide mineral dissolution, *Geochimica et Cosmochimica Acta* **207**, 298-321.
- Wang, G., Um, W., Wang, Z., §Reinoso-Maset E., Washton, N., Mueller, K. T., Perdrial, N., O'Day, P., and Chorover, J. (2017) Uranium release from acidic weathered Hanford sediments: single-pass flow-through and column experiments, *Environmental Science & Technology* **51(19)**, 11011-11019.
- Zhang, H., Zhou, L., Yuen, J., §Birkner, N., Leppert, V., O'Day, P. A., and Forman, H. J. (2017) Delayed Nrf2-regulated antioxidant gene induction in response to silica nanoparticles, *Free Radical Biology & Medicine* **108**, 311-319.
- §Serrano, S., Vlassopoulos, D., and \*O'Day, P. A. (2016) Immobilization of Hg(II) in sediments by cement amendment, *Applied Geochemistry* **67**, 68-80.
- Gómez-González, M. Á., Bolea, E., O'Day, P. A., Garcia-Guinea, J., Garrido, F. and Laborda, F. (2016) Combining single-particle inductively coupled plasma mass spectrometry and X-ray absorption spectroscopy to evaluate the release of colloidal arsenic from environmental samples, *Analytical & Bioanalytical Chemistry*, **408**, 5125-5153, doi: 10.1007/s00216-016-9331-4.
- §Serrano, S., Gómez-González, M. Á., O'Day, P. A., Laborda, F., Bolea, E., and Garrido, F. (2015) Arsenic speciation in the dispersible colloidal fraction of soils from a mine-impacted creek, *Journal of Hazardous Materials*, **289**, 30-40.
- Perdrial, N., Thompson, A., O'Day, P. A., Steefel, C. I. and Chorover, J. (2014) Mineral transformation controls solid-phase speciation and pore-fluid transmission of contaminants in waste-weathered Hanford sediments, *Geochimica et Cosmochimica Acta*, **141**, 487-507.
- §\*Kanematsu, M., Perdrial, N., Um, W., Chorover, J., and O'Day, P. A. (2014) Influence of phosphate and silica on U(VI) precipitation from acidic and neutralized wastewaters, *Environmental Science & Technology* **48 (11)**, 6097-6106.
- §\*Serrano, S., Vlassopoulos, D., Garrido, F., and O'Day, P. A. (2013) A combined site-specific metals sorption and transport model for intact soil columns, *Vadose Zone Journal*, **12(4)**, doi:10.2136/vzj2012.0152.
- Beller, H. R., Zhou, P., Legler, T. C., Chakicherla, A., Kane, S., Letain, T. E., and O'Day, P. A. (2013) Genome-enabled studies of anaerobic, nitrate-dependent Fe(II) oxidation in the

chemolithoautotrophic bacterium *Thiobacillus denitrificans*, *Frontiers in Microbiology*, 4:249. doi:10.3389/fmicb.2013.00249.

- <sup>§\*</sup>Serrano, S., Vlassopoulos, D., Bessinger, B., and O'Day, P. A. (2012) Immobilization of Hg(II) by coprecipitation in sulfate-cement systems, *Environmental Science & Technology* **46**(12), 6767-6775.
- <sup>‡</sup>Helmhart, M., O'Day, P. A., Garcia-Guinea, J., <sup>§</sup>Serrano, S., and Garrido, F. (2012) Arsenic, copper, and zinc leaching through preferential flow in mining-impacted soils, *Soil Science Society of America Journal* **76**(2), 449-462.
- Hayes, S. M., Webb, S. M., Bargar, J. R., O'Day, P. A., Maier, R. M., and Chorover, J. (2012) Geochemical weathering increases lead bioaccessibility in semi-arid mine tailings, *Environmental Science & Technology* **46**(11), 5834-5841.
- Bessinger, B., Vlassopoulos, D., <sup>§</sup>Serrano, S., and <sup>\*</sup>O'Day, P. A. (2012) Reactive transport modeling of subaqueous sediment caps and implications for the long-term fate of arsenic, mercury, and methylmercury, *Aquatic Geochemistry* **18**(4), 297-326.
- Perdrial, N., <sup>‡</sup>Rivera, N., Thompson, A., O'Day, P. A., and Chorover, J. (2011) Trace contaminant and CO<sub>2</sub> concentrations affect mineral transformation and pollutant fate in hydroxide weathered Hanford sediments, *Journal of Hazardous Materials* **197**, 119-127.
- <sup>\*\*</sup>Rivera, N., Choi, S., Strepka, C., Mueller, K., Perdrial, N., Chorover, J. and O'Day, P. A. (2011) Cesium and strontium incorporation into zeolite-type phases during homogeneous nucleation from caustic solutions, *American Mineralogist* **96**(11-12), 1809-1820.
- Hayes, S. M., O'Day, P. A., Webb, S. M., Maier, R. M., and Chorover, J. (2011) Changes in zinc speciation with mine tailings acidification in a semi-arid weathering environment, *Environmental Science & Technology* **45**, 7166-7172.
- Hering, J. G., Hug, S., Farnsworth, C. and O'Day, P. A. (2011) Role of coupled redox transformations in the mobilization and sequestration of arsenic, *ACS Symposium Series: Aquatic Redox Chemistry*, Tratnyek, P.G., et al. (eds.), Chapter 21, 463- 476 (*invited paper*).
- <sup>\*</sup>O'Day, P. A., and Vlassopoulos, D. (2010) Mineral-based amendments for remediation, *Elements* **6**, 375-381 (*invited paper*).
- Vlassopoulos, D., Bessinger, B., and O'Day, P. A. (2010) Aqueous solubility of As<sub>2</sub>S<sub>3</sub> and thermodynamic stability of thioarsenites, in *Water-Rock Interaction*. Birkle, P., and I. S. Torres-Alvarado (eds.). Boca Raton: CRC Press, 823-826.
- Arnórsson, S., Hurtig, N., Gysi, A.P., Bird, D. K., and O'Day, P. A. (2010) Carbon dioxide waters in Iceland: A natural analogue to CO<sub>2</sub> sequestration in basaltic aquifers, in *Water-Rock Interaction*. Birkle, P., and I. S. Torres-Alvarado (eds.). Boca Raton: CRC Press.
- He, Y. T., Fitzmaurice, A. G., Bilgin, A., <sup>§</sup>Choi, S., O'Day, P. A., Horst, J., Harrington, J., Reisinger, H. J., Burris, D. R., and Hering, J. G. (2010) Geochemical processes controlling arsenic mobility in groundwater: A case study of arsenic mobilization and natural attenuation, *Applied Geochemistry* **25**, 69-80.
- Fitzmaurice, A. G., Bilgin, A. A., O'Day, P. A., Illera, V., Burris, D. R., Reisinger, H. J., and Hering, J. G. (2009) Geochemical and hydrologic controls on the mobilization of arsenic derived from herbicide application, *Applied Geochemistry* **24**, 2152-2162.
- Hering, J. G., O'Day, P. A., Ford, R. G., He, Y. T., Bilgin, A., Reisinger, H. J., and Burris, D. R. (2009) MNA as a remedy for arsenic mobilized by anthropogenic inputs of organic carbon, *Ground Water Monitoring & Remediation* **29**, 84-92.

- ‡Root, R. A., Vlassopoulos, D., Rivera, N., Rafferty, M. T., Andrews, C., and \*O'Day, P. A. (2009) Speciation and natural attenuation of arsenic and iron in a tidally influenced shallow aquifer, *Geochimica et Cosmochimica Acta* **73**, 5528-5553.
- §Choi, S., \*O'Day, P. A., and Hering, J. G. (2009) Natural attenuation of arsenic by sediment sorption and oxidation, *Environmental Science & Technology*, **43**, 4253-4259.
- §\*Serrano, S., O'Day, P. A., Vlassopoulos, D., García-González, M.T., and Garrido, F. (2009) A surface complexation and ion exchange model of Pb and Cd competitive sorption on natural soils, *Geochimica et Cosmochimica Acta* **73**, 543-558.
- Carroll, S. A., Roberts, S., Criscenti, L. J., and O'Day, P. A. (2008) Surface complexation model for strontium sorption to amorphous silica and goethite, *Geochemical Transactions* **9**:2, doi: 10.1186/1467-4866-9-2.
- Chorover, J., §Choi, S., Rotenberg, P., Serne, R. J., ‡Rivera, N., Strepka, C., Thompson, A., Mueller, K. T., and O'Day, P. A. (2008) Silicon control of strontium and cesium partitioning in hydroxide-weathered sediments, *Geochimica et Cosmochimica Acta* **72**, 2024-2047.
- Campbell, K. M., ‡Root, R. A., O'Day, P. A., and Hering, J. G. (2008) A gel probe equilibrium sampler for measuring arsenic porewater profiles and sorption gradients in sediments: I. Laboratory development, *Environmental Science & Technology* **42(2)**, 497-503.
- Campbell, K. M., ‡Root, R. A., O'Day, P. A., and Hering, J. G. (2008) A gel probe equilibrium sampler for measuring arsenic porewater profiles and sorption gradients in sediments: II. Field application to Haiwee Reservoir sediments, *Environmental Science & Technology* **42(2)**, 504-510.
- ‡Root, R. A., Dixit, S., Campbell, K. M., Jew, A., Hering, J. G., and \*O'Day, P. A. (2007) Arsenic sequestration by sorption processes in high-iron sediments, *Geochimica et Cosmochimica Acta*, **71**, 5782-5803.
- \*O'Day, P. A. (2006) Chemistry and mineralogy of arsenic, *Elements* **2**, 77-83 (invited paper).
- §Choi, S., \*O'Day, P. A., Rivera, N. A., Mueller, K. T., Vairavamurthy, M., Seraphin, S., and Chorover, J. (2006) Strontium speciation during reaction of kaolinite with simulated tank-waste leachate: Bulk and microfocused EXAFS analysis, *Environmental Science & Technology* **40**, 2608-2614.
- Crossen, G., §Choi, S., Chorover, J., Amistadi, M. K., O'Day, P. A., and Mueller, K.T. (2006) Solid-state NMR identification and quantification of newly formed aluminosilicate phases in weathered kaolinite systems, *Journal of Physical Chemistry B* **110**, 723-732.
- McCliment, E.A., Voglesonger, K. M., O'Day, P. A., Dunn, E. E., Holloway, J. R., and Cary, S. C. (2006) Colonization of nascent, deep-sea hydrothermal vents by a novel Archaeal and Nanoarchaeotal assemblage, *Environmental Microbiology* **8**, 114-125.
- \*O'Day, P. A., Vlassopoulos, D., Meng, X. and Benning, L. G., Editors (2005) *Advances in Arsenic Research: Integration of Experimental and Observational Studies and Implications for Mitigation*, American Chemical Society Symposium Series **915**, 433 pp.
- Vlassopoulos, D., O'Day, P. A., ‡Rivera, N., Rafferty, M. T., and Andrews, C. B. (2005) Arsenic removal by granular iron: A field-based study of rates, mechanisms and long-term performance, in *Advances in Arsenic Research: Integration of Experimental and Observational Studies and Implications for Mitigation*, O'Day et al. (Eds.), American Chemical Society Symposium Series **915**, 344-360.
- Savage, K. S., Bird, D. K., and O'Day, P. A. (2005) Arsenic speciation in synthetic jarosite, *Chemical Geology* **215**, 473-498.

- \*O'Day, P. A., Vlassopoulos, D., ‡Root, R., and ‡Rivera, N. (2004) The influence of sulfur and iron on dissolved arsenic concentrations in the shallow subsurface under changing redox conditions, *Proceedings of the National Academy of Sciences USA* **101**, 13703-13708.
- \*O'Day, P. A., ‡Rivera, N., ‡Root, R., and Carroll, S. A. (2004) X-ray absorption spectroscopic study of iron reference compounds for the analysis of natural sediments, *American Mineralogist* **89**, 572-585.
- Hering, J. G., Dixit, S., Campbell, K., and O'Day, P. A. (2004) Arsenic mobilization from contaminated sediments: A full-scale experiment in progress. *Eleventh International Symposium on Water-Rock Interactions, WRI-11 Proceedings*.
- ‡Ashbridge, D. A., Thorne, M. S., Rivers, M. L., Muccino, J. C., and \*O'Day, P. A. (2003) Image optimization and analysis of synchrotron X-ray computed microtomography (C $\mu$ T) data, *Computers & Geosciences* **29**, 823-836.
- Carroll, S. A., O'Day, P. A., Esser, B., and Randall, S. (2002) Speciation and fate of trace metals in estuarine sediments under reduced and oxidized conditions, Seaplane Lagoon, Alameda Naval Air Station (USA), *Geochemical Transactions* **3**(10), 81-101.
- Hansen, H., Pedersen, A. K., Duncan, R. A., Bird, D. K., Brooks, C. K., Fawcett, J. J., Gittins, J., Gorton, M., and O'Day, P. (2002) Volcanic stratigraphy of the southern Prinsen af Wales Bjerger region, East Greenland, *Geological Society, London, Special Publication*, No. 197, 183-218.
- Melitas, N., Wang, J., Conklin, M., O'Day, P., and Farrell, J. (2002) Understanding soluble arsenate removal kinetics by zero valent iron media, *Environmental Science & Technology* **36**, 2074-2081.
- Kneebone, P. E., O'Day, P. A., Jones, N., and Hering, J. G. (2002) Deposition and fate of arsenic in iron- and arsenic-enriched sediments, *Environmental Science & Technology* **36**, 381-386.
- Kay, J. T., Conklin, M. H., Fuller, C. C., and O'Day, P. A. (2001) Processes of nickel and cobalt uptake by a Mn-oxide forming sediment in Pinal Creek, Globe Mining District, Arizona, *Environmental Science & Technology* **35**, 4719-4725.
- ‡Voglesonger, K. M., Holloway, J. R., Dunn, E. E., §Dalla-Betta, P. J., and \*O'Day, P. A. (2001) Experimental abiotic synthesis of methanol in seafloor hydrothermal systems, *Chemical Geology* **180**, 129-139.
- Farrell, J., Wang, J., O'Day, P. and Conklin, M. (2001) Electrochemical and spectroscopic study of arsenate removal from water using zero valent iron media, *Environmental Science & Technology* **35**, 2026-2032.
- ‡Heister, L. E., O'Day, P. A., Brooks, C. K., Neuhoﬀ, P. S., and Bird, D. K. (2001) Pyroclastic deposits within the East Greenland Tertiary flood basalts, *Journal of the Geological Society, London* **158**, 269-284.
- Villinski, J. E., O'Day, P. A., Corley, T. L., and Conklin, M. H. (2001) *In situ* spectroscopic and solution analyses of the reductive dissolution of MnO<sub>2</sub> by Fe(II), *Environmental Science & Technology* **35**, 1157-1163.
- \*O'Day, P. A., Carroll, S. A., Randall, S., Martinelli, R. E., Anderson, S. L., Knezovich, J. P., and Jelinski, J. (2000) Metal speciation and toxicity in contaminated estuary sediments, Alameda Naval Air Station, California, *Environmental Science & Technology* **34**, 3665-3673.
- Holloway, J. R. and O'Day, P. A. (2000) Production of CO<sub>2</sub> and H<sub>2</sub> by dike-eruptive events at mid-ocean ridges: Implications for abiotic organic synthesis and global geochemical cycling, *International Geology Review* **42**, 673-683.

- Savage, K. S., Tingle, T. N., O'Day, P. A., Waychunas, G. A., and Bird, D. K. (2000) Arsenic speciation in pyrite and secondary weathering phases, Mother Lode Gold District, Tuolumne County, California, *Applied Geochemistry* **15**, 1219-1244.
- \*O'Day, P. A., Newville, M., Neuhoff, P. S., §Sahai, N., and Carroll, S. A. (2000) X-ray absorption spectroscopy of strontium(II) coordination. I. Static and thermal disorder in crystalline, hydrated, and precipitated solids and in aqueous solution, *Journal of Colloid and Interface Science* **222**, 184-197.
- §Sahai, N., Carroll, S. A., Roberts, S., and O'Day, P. A. (2000) X-ray absorption spectroscopy of strontium(II) coordination. II. Sorption and precipitation at kaolinite, silica gel, and goethite surfaces, *Journal of Colloid and Interface Science* **222**, 198-212.
- \*O'Day, P. A. (1999) Molecular environmental geochemistry, *Reviews of Geophysics* **37**, 249-274 (invited paper).
- Newville, M., Carroll, S. A., O'Day, P. A., Waychunas, G. A., and Ebert, M. (1999) A web-based library of XAFS data on model compounds, *Journal of Synchrotron Radiation* **6**, 276-277.
- ‡Best, J. E., Geiger, K. E., and O'Day, P. A. (1999) Partitioning of trace metals between contaminated stream waters and manganese oxide minerals, Pinal Creek (AZ). In Morganwalp, D. W. and Buxton, H. T. (eds.), *U.S. Geological Survey, Toxic Substances Hydrology Program*, Charleston SC. USGS Water-Resources Investigations Report 99-4018A, p. 227-237.
- Villinski, J. E., O'Day, P. A., Corley, T. L., and Conklin, M. H. (1999) A flow-through cell for in situ, real time X-ray absorption spectroscopy studies of geochemical reactions. In Morganwalp, D. W. and Buxton, H. T. (eds.), *U.S. Geological Survey, Toxic Substances Hydrology Program*, Charleston SC. USGS Water-Resources Investigations Report 99-4018A, p. 217-225.
- \*O'Day, P. A., Carroll, S. A., and Waychunas, G. A. (1998) Rock-water interactions controlling zinc, cadmium, and lead concentrations in surface waters and sediments, U.S. Tri-State Mining District. I. Molecular identification using X-ray absorption spectroscopy, *Environmental Science & Technology* **32**, 943-955.
- Carroll, S. A., O'Day, P. A., and Piechowski, M. (1998) Rock-water interactions controlling zinc, cadmium, and lead concentrations in surface waters and sediments, U.S. Tri-State Mining District. II. Geochemical interpretation, *Environmental Science & Technology* **32**, 956-965.
- \*O'Day, P. A., ‡Geiger, K. E., and Fuller, C. C. (1998) Molecular characterization of manganese oxides and trace metals in stream sediments from a mining-contaminated site. *Proceedings, 9th International Symposium on Water-Rock Interaction* (Arehart, G.B. & Hulston, J.R., eds.), 993-996.
- Fischer, T. P., Shuttleworth, S., and O'Day, P. A. (1998) Determination of trace and platinum-group elements in high ionic-strength volcanic fluids by sector-field inductively couple plasma mass spectrometry (ICP-MS), *Fresenius Journal of Analytical Chemistry* **362**, 457-464.
- \*O'Day, P. A., Chisholm-Brause, C. J., Towle, S. N., Parks, G. A., and Brown, G. E., Jr. (1996) X-ray absorption spectroscopy of Co(II) sorption complexes on quartz ( $\alpha$ -SiO<sub>2</sub>) and rutile (TiO<sub>2</sub>), *Geochimica et Cosmochimica Acta* **60**, 2515-2532.
- \*O'Day, P. A., Carroll, S. A., Waychunas, G. A., and Phillips, B. (1995) XAS of trace element coordination in natural sediments at ambient and cryogenic temperatures. *Physica B* **208 & 209**, 309-310.
- Brown, G. E., Jr., Parks, G. A., and O'Day, P. A. (1995) Sorption at mineral/water interfaces: Macroscopic and microscopic perspectives. In *Mineral Surfaces*, D. J. Vaughan and R. A. D. Patrick (eds.), Chapman and Hall, 129-183.

- \*O'Day, P. A., Brown, G. E., Jr., and Parks, G. A. (1994) X-ray absorption spectroscopy of cobalt(II) multinuclear surface complexes and surface precipitates on kaolinite. *Journal of Colloid and Interface Science* **165**, 269-289.
- \*O'Day, P. A., Parks, G. A., and Brown, G. E., Jr. (1994) Molecular structure and binding sites of cobalt(II) surface complexes on kaolinite from X-ray absorption spectroscopy. *Clays and Clay Minerals* **42**, 337-355.
- \*O'Day, P. A., Rehr, J. J., Zabinsky, S. I., and Brown, G. E., Jr. (1994) Extended X-ray absorption fine structure (EXAFS) analysis of disorder and multiple-scattering in complex crystalline solids. *Journal of the American Chemical Society* **116**, 2938-2949.
- \*O'Day, P. A., Brown, G. E., Jr., and Parks, G. A. (1991) EXAFS study of aqueous Co(II) sorption complexes on kaolinite and quartz surfaces. In *X-ray Absorption Fine Structure*, S. S. Hasnain (ed.), Ellis Horwood Ltd., 260-262.
- Chisholm-Brause, C. J., O'Day, P. A., Brown, G. E., Jr., and Parks, G. A. (1990) Evidence for multinuclear metal-ion complexes at solid/water interfaces from X-ray absorption spectroscopy. *Nature* **348**, 528-531.
- Gibbs, A. K., Montgomery, C., O'Day, P. A., and Erslev, E. (1986) The Archean-Proterozoic transition: Evidence from the geochemistry of metasedimentary rocks of Guyana and Montana. *Geochimica et Cosmochimica Acta* **50**, 2125-2141.

#### Peer-reviewed Reports and Proceedings

- O'Day, P. A., Burmistrova, J., Rivas, E., Seelos, M., Fuhrmann, B., Beutel, M. Traina, S., and Vlassopoulos, D. (2020) Novel remediation of mercury-contaminated sediments using manganese oxide and activated carbon amendments. *Waste Management Symposia WM2020*.
- National Academies of Sciences, Engineering, and Medicine (2017) *Investigative Strategies for Lead-Source Attribution at Superfund Sites Associated with Mining Activities*. Washington DC: The National Academies Press, 112 p. doi: <https://doi.org/10.17226/24898>. (1 of 14 co-authors).

#### ABSTRACTS (last 5 years)

- Aronstein, P., Leppert, V. J., Robinson, M., and O'Day, P. A. (2022) Chemical speciation in size-fractionated urban particulate matter by spectromicroscopy methods. *AGU Fall Annual Meeting* (Dec. 12-16, Chicago, IL).
- Straw, B., Weiss-Penzias, P., Seelos, M., O'Day, P. A., and Janssen, S. E. (2022) Lichen bioindicators reveal potential source of mercury from atmosphere to reservoirs in a mercury mining-impacted watershed. *AGU Fall Annual Meeting* (Dec. 12-16, Chicago, IL).
- Barnes, M., Grieger, S., Young, R., Aronstein, P., O'Day, P., McKeever, S., Renteria, L., Munson, K., Myers, C., Garayburu-Caruso, V., Scheibe, T., Graham, E., Myers-Pigg, A. (2022) Burn severity regulates organic matter phosphorus composition. *AGU Fall Annual Meeting* (Dec. 12-16, Chicago, IL).
- Reinoso-Maset, E., Perdrial, N., Vazquez-Ortega, A., Kanematsu, M., Wang, G., Um, W., Steefel, C.I., Chorover, J., and O'Day, P. A. (2022) Uranium fate in acidic waste-weathered sediments: Scaling of molecular processes to predict reactive transport. *American Chemical Society National Meeting & Exposition* (Aug. 21-25, Chicago, IL)
- Aronstein, P., Leppert, V. J., Robinson, M., and O'Day, P. A. (2022) Chemical speciation of copper phases in size-fractionated urban ambient particulate matter. *Goldschmidt 2022, International Geochemistry Conference* (July 10-15, Honolulu, HI).

- Rivas Meraz, J., Traina, S., Beutel, M., and O'Day, P. A. (2022) Mixed-valent manganese oxide modified activated carbon (MOMAC) amendments for remediation of mercury-contaminated sediments. *Goldschmidt 2022, International Geochemistry Conference* (July 10-15, Honolulu, HI).
- Rivas Meraz, J., Traina, S., Beutel, M., and O'Day, P. A. (2022) Manganese(IV) oxide modified activated carbon amendments for mercury remediation in contaminated sediments. *American Chemical Society National Meeting & Exposition* (Mar. 21-25, San Diego, CA).
- O'Day, P. A., Pattammattel, A., Leppert, V. J., and Forman, H. J. (2021) Iron speciation in airborne particulate matter from urban locations and implications for human health. *AGU Fall Annual Meeting* (Dec. 16, virtual).
- Rivas-Meraz, E., Seelos, M., Burmistrova, J., Beutel, M., Traina, S., and O'Day, P. A. (2021) Remediation of mercury-contaminated aquatic sediments with manganese(iv) oxide and activated carbon amendments. *American Chemical Society National Meeting & Exposition* (Apr. 5-23, virtual).
- Helmrich, S., Quinn, N. W. T., Herr J., Beutel, M., and O'Day, P. A. (2021) Improvement of WARMF model to simulate wetland processes leading to increased salinity. *2021 Bay-Delta Science Conference* (April 6-9, virtual).
- Jones, D. L., Gordus, A. G., Quinn, N. W. T., Beutel, M., and O'Day, P. A. (2021) Mercury trends in seasonal wetlands of the Los Banos Wildlife Area. *2021 Bay-Delta Science Conference* (April 6-9, virtual).
- Rivas-Meraz, E., Seelos, M., Salas Hernandez, J., Anderson, T., Laquindanum, V., Martinez, D., Beutel, M., Traina, S., and O'Day, P. A. (2021) Characterization of manganese oxide amendments for remediation of mercury-contaminated sediments. *Waste Management Symposia WM2021* (Mar. 8-12, virtual).
- Barnes, M. E., Hart, S. C., O'Day, P. A., Young, R. P., and Berhe, A. A. (2020) Soil phosphorus stock and speciation with regolith development: does the walker and syers model apply to a climatic weathering gradient? *AGU Fall Annual meeting* (Dec. 8, virtual).
- Helmrich, S., Vlassopoulos, D., Alpers, C. N., Quinn, N. W. T. and O'Day, P. A. (2020) Thermodynamic-kinetic model of net methylmercury production in sediments as a management tool. *California Water and Environmental Modeling Forum* (Dec. 1, virtual).
- Barnes, M. E., Berhe, A. A., O'Day, P. A., Young, R., and Hart, S. C. (2020) Soil phosphorus stock and speciation with regolith development: does the walker and syers model apply to a climatic weathering gradient? *Soil Science Society of America Annual Meeting* (Nov. 9-13, virtual).
- Helmrich, S., Vlassopoulos, D., Alpers, C. N., Quinn, N. W. T. and O'Day, P. A. (2020) Biogeochemical simulations to assess the impact of redox processes on mercury cycling. *Goldschmidt 2020, International Geochemistry Conference* (June, virtual).
- O'Day, P. A., Burmistrova, J., Rivas, E., Seelos, M., Fuhrmann, B., Beutel, M. Traina, S., and Vlassopoulos, D. (2020) Novel remediation of mercury-contaminated sediments using manganese oxide and activated carbon amendments. *Waste Management Symposia WM2020*, Phoenix, AZ, Mar. 8-12.
- Seelos, M., Rivas Meraz, E., Burmistrova, J., O'Day, P. A., and Beutel, M. (2020) Manganese oxide and activated carbon amendments for porewater mercury (Hg) remediation. *Waste Management Symposia WM2020*, Phoenix, AZ, Mar. 8-12.
- Helmrich, S., Vlassopoulos, D., and O'Day, P. A. (2019) Assessment of the influence of climate change on mercury methylation on a molecular scale with a mechanistic reaction-transport model. *American Chemical Society National Meeting & Exposition*, San Diego, CA, Aug. 25-29.

- Vlassopoulos, D., Helmrich, S., and O'Day, P. A. (2019) A semi-empirical kinetic-thermodynamic framework for assessing methylmercury productivity and expression in aquatic sediments. *Goldschmidt 2019, International Geochemistry Conference*, Barcelona, Spain, Aug. 18-23.
- Rivas Meraz, E., Burmistrova, J., Muranaka, H., Cisneros Castillo, S., Mercado, J., Aguilar, B., Martinez, D., Machado-Perez, F., Anderson, T., Seelos, M., Traina, S., Beutel, M., and O'Day, P.A. (2019) Redox behavior of manganese oxide amendments for remediation of mercury-contaminated sediments, *Stanford Synchrotron Radiation Lightsource (SSRL) Users Meeting*, Stanford, CA, Sept. 26.
- Burmistrova, J., Seelos, M., Beutel, M., Traina, S., and O'Day, P. (2019) Assessment of manganese/iron oxide-modified activated carbon to repress methylmercury production in hg-contaminated sediments, *American Ecological Engineering Society 19th Annual Meeting*, Ashville, NC, June 3-6.
- Helmrich, S., Vlassopoulos, D., Alpers, C.N., and O'Day, P. A. (2019) Simulation of mercury methylation and demethylation coupled to oxidation-reduction reactions in sediments of Delta tributaries. *California Water & Environmental Modeling Forum (CWEMF)*, Folsom CA, April 22-24.
- O'Day, P. A., Reinoso-Maset, E., and Helmrich, S. (2019) *Keynote*: Biogeochemical and reactive transport modeling as an integrative tool for simulation and forecasting of contaminant chemistry, transport, and remediation. *American Chemical Society National Meeting & Exposition*, Orlando, FL, Mar. 31-April 4.
- Helmrich, S., Vlassopoulos, D., Alpers, C.N., and O'Day, P. A. (2018) Simulation of biogeochemical processes driving methylmercury production in different sediment habitats of the Delta and its tributaries, *10th Biennial Bay-Delta Science Conference*, Sacramento, CA, Sept. 10-12.
- O'Day, P. A. (2018) *Keynote*: Advances and new challenges in molecular-scale interfacial reactions and applications to sustainable remediation of contaminants. *Goldschmidt 2018, International Geochemistry Conference*, Boston, MA, Aug. 12-17.
- Helmrich, S., Vlassopoulos, D., Alpers, C.N., and O'Day, P. A. (2018) Critical review of mercury methylation and demethylation rate laws for biogeochemical reaction modeling. *Goldschmidt 2018, International Geochemistry Conference*, Boston, MA, Aug. 12-17.
- Hart, S.C., Aarons, S., Aciego, S., Aronson, E., Barnes, M., Blakowski, M., Carey, C., Christensen, J., Coble, A., Dove, N., Chunhao Gu, C., Maltz, M., Nwosu, U.G., O'Day, P., Riebe, C., Zhu, M. (2018) Ashes to ashes, dust to dust: The significance of aeolian particulate inputs to temperate ecosystems. *Ecological Society of America Annual Meeting*, New Orleans, LA, Aug. 5-10.
- Fuhrmann, B., Beutel, M., Pasek, J., Marvin, M., Brower, S., O'Day, P., (2018). Mercury cycling in California reservoirs: Takeaways and management strategies to repress bioaccumulation. *American Ecological Engineering Society*, Houston, TX, June 12-14.
- Nwosu, U. G., Barnes, M., Berhe, A. A., Hart, S. C., Christensen, J. N., Williams, K. H., and O'Day, P. A. (2018) Phosphorus speciation in atmospherically deposited particulate matter and potential impact on terrestrial soil nutrient cycling and ecosystem productivity. *TES/SBR Joint Investigators Meeting*, Potomac MD, May 1-2.
- Pattammattel, A., Zhang, H., Forman, H. J., Leppert, V., and O'Day, P. A. (2018) Synthetic nanoparticle analogues for studying biological response to airborne particulate matter. *255rd American Chemical Society National Meeting & Exposition*, March 25-29, New Orleans, LA.
- Pattammattel, A., Forman, H. J., O'Day, P. A., and Leppert, V., (2018) Fe L-edge spectroscopy reveals the chemistry of iron in nanoscale particulate matter. *255rd American Chemical Society National Meeting & Exposition*, March 25-29, New Orleans, LA.

- Nwosu, U. G., Lash, B., Barnes, M., Hart, S. C., Berhe, A. A., and O'Day, P. A. (2018) Phosphorus speciation in atmospherically deposited air particulates from high and low elevation sites of California and Colorado. *255rd American Chemical Society National Meeting & Exposition*, March 25-29, New Orleans, LA.
- Helmrich, S., Vlassopoulos, D., and O'Day, P. A. (2017) Development and application of a biogeochemical reaction-transport model for simulating mercury methylation in sediments at two mercury-impacted sites in California. *13th International Conference on Mercury as a Global Pollutant*, July 16-21. Providence, RI, USA.
- Vlassopoulos, D., Kanematsu, M., Goin, J., Leven, A., and O'Day, P. A. (2017) *In situ* control of methylmercury production in sediments using redox-buffering mineral amendments. *13th International Conference on Mercury as a Global Pollutant*, July 16-21. Providence, RI, USA.
- Leven, A., Vlassopoulos, D., Goin, J., Kanematsu, M., and O'Day, P. A.\* (2017) Characterization of manganese oxide amendments for *in situ* remediation of mercury-contaminated sediments. *13th International Conference on Mercury as a Global Pollutant*, July 16-21. Providence, RI, USA.  
\*presenting
- Kubicki, J. D., Watts, H. D., and O'Day, P. A. (2017) Modeling X-ray absorption spectra of Cd(II) on clays. *16th International Clay Conference*, July 17-21, Granada, Spain.
- O'Day, P. A., Nwosu, U. G., Lash, B., Barnes, M., Berhe, A. A., Fogel, M. F., and Hart, S. C., (2017) Experimental and modeling investigation of the impact of atmospherically deposited phosphorus on terrestrial soil nutrient and carbon cycling, and ecosystem productivity. *TES/SBR Joint Investigators Meeting*, Potomac MD, April 25-26.
- O'Day, P. A., Reinoso-Maset, E., Nguyen, K., Leppert, V., and Forman, H. J., (2017) Element speciation in atmospheric nanoparticles and implications for human health and biogeochemical cycling. *American Chemical Society National Meeting & Exposition*, April 2-6, San Francisco, CA.
- Pattammattel, A., O'Day, P. A., Zhang, H., Leppert, V., and Forman, H.J., (2017) Synthetic nanoparticle analogues for studying biological response to airborne particulate matter. *American Chemical Society National Meeting & Exposition*, April 2-6, San Francisco, CA.
- Helmrich, S., Vlassopoulos, D., and O'Day, P. A. (2017) Assessment of the influence of climate change on mercury methylation on a molecular scale with a mechanistic reaction-transport model. *American Chemical Society National Meeting & Exposition*, April 2-6, San Francisco, CA.
- Vlassopoulos, D., Kanematsu, M., Leven, A., Goin, J., and O'Day, P. A. (2016) Redox manipulation: A novel approach for passive *in situ* remediation of mercury contaminated sediments. *Goldschmidt 2014, International Geochemistry Conference*, June 26-July 1. Yokohama, Japan.
- O'Day, P. A., Birkner, N., Small, M.A., Watts, H. D., Kubicki, J. D., and Rehr, J. J. (2016) Multiple Cd<sup>2+</sup> surface complexes on gibbsite and kaolinite at low surface loading from combined experimental and computational methods, *American Chemical Society National Meeting & Exposition*, March 13-17, San Diego, CA.
- Watts, H. D., O'Day, P. A., and Kubicki, J. D. (2016) Use of DFT thermodynamics calculations to better understand how Cd<sup>2+</sup> adsorbs to kaolinite (100) and gibbsite (100) surfaces. *American Chemical Society National Meeting & Exposition*, March 13-17, San Diego, CA.
- Birkner, N., Small, M.A., Watts, H. D., Kubicki, J. D. and O'Day, P. A. (2016) Surface reconstruction and electronic bonding states of Cd sorbed to gibbsite from experimental and theoretical XANES spectra and DFT computations, *American Chemical Society National Meeting & Exposition*, March 13-17, San Diego, CA.

- Leven, A., Vlassopoulos, D., Goin, J., Kanematsu, M., O'Day, P. A. (2016) Manganese oxide amendments for in situ remediation of mercury contaminated sediments. *American Chemical Society National Meeting & Exposition*, March 13-17, San Diego, CA.
- Nguyen, K., Reinoso-Maset, E., Premshkharan, G., Forman, H.J., O'Day, P., and Leppert, V. (2016) Iron-doped silica nanoparticles as a model system for lung inflammation studies. *Spring Materials Research Society Meeting*, Symposium NT8 - Silicon Nanostructures—Doping, Interface Effects and Sensing, March, 2016, Phoenix, AZ.
- O'Day, P. A., Leven, A., Goin, J., Kanematsu, M., and Vlassopoulos, D., (2016) Manganese oxide amendments for in situ remediation of mercury contaminated sediments, *Workshop: Revisiting the 2003 Mercury Strategy for the Bay-Delta Ecosystem*, January 26-28, Sacramento, CA (invited poster presentation).

### **RECENT INVITED TALKS**

- Advanced Light Source (ALS) User's Meeting, workshop speaker, 2020 (virtual)
- American Chemical Society National Meeting, Orlando, FL, 2019 (session keynote)
- Goldschmidt 2018, International Geochemistry Conference, Boston, MA, 2018 (session keynote)
- Department of Energy, TES/SBR Joint Investigators Meeting, Potomac, MD, 2018
- Department of Earth and Environmental Sciences, California State University, Fresno, 2018
- Geochemistry Lecture Series, California State University, Stanislaus, 2018
- Speaker and Symposium Co-organizer, American Chemical Society Meeting, 2017
- Department of Energy, TES/SBR Joint Investigators Meeting, Potomac, MD, 2017
- Stanford Synchrotron Radiation Lightsource (SSRL) User's Meeting, 2015
- California State University, Stanislaus, 2015
- Adrian Smith Lectureship on Environmental Geochemistry, University of Waterloo, Canada, 2014
- Goldschmidt 2014, International Geochemistry Conference, Sacramento, CA, 2014 (session keynote)
- Gordon Research Conference, Environmental Sciences: Water, invited Discussion Leader, 2014
- Department of Energy, TES/SBR Joint Investigators Meeting, Potomac, MD, 2014
- Goldschmidt 2013, International Geochemistry Conference, Florence, Italy, 2013 (two invited talks)
- Department of Energy, TES/SBR Joint Investigators Meeting, Potomac, MD, 2013

### **EXTERNAL RESEARCH GRANTS**

#### **Active**

Department of Energy, Environmental Management, Minority Serving Institutions Partnership Program (P.I.: O'Day; co-PI's: M. Beutel, S. Traina): "Manganese and iron oxide-modified activated carbon for the remediation of mercury-contaminated sediment and water", 06/15/2021 to 08/09/2023, \$560,000.

Valley Water, Santa Clara County Water District (P.I.: M. Beutel; co-PI: O'Day): "Evaluation of Sediment Amendments to Control Methylmercury Production in Polluted Aquatic Sediments", 07/01/2022 to 09/30/2024, \$250,000.

#### **Previous**

Delta Science Program, Delta Stewardship Council, State of California (P.I.: O'Day; co-PI's: N. Quinn, M. Beutel, S. Hart): "Integrated science and management of nutrient, salt, and mercury export from San Joaquin River wetland tributaries to the Delta", 06/30/2019 to 04/30/2022, \$863,160.

US Geological Survey, Cooperative Agreement (P.I.: O'Day; co-PI: M. Beutel): "Cache Creek Settling Basin Mercury Studies Project", 10/01/2020 to 09/30/2021, \$83,000.

Department of Energy, Environmental Management, Minority Serving Institutions Partnership Program (P.I.: O'Day; co-PI's: M. Beutel, S. Traina): "Manganese and iron oxide-modified activated carbon for the remediation of mercury-contaminated sediment and water", 01/01/2020 to 06/31/2021, \$270,000.

NIH-NIEHS (P.I.: H. Forman, Univ. of Southern California; O'Day UCM P.I.): "Human models of the nanoparticulate-induced inflammatory/antioxidant axis in aging" 02/09/2015 to 11/30/2020, UCM award: \$609,146.

Jacobson James & Associates, Inc. (primary: City of Modesto, California Prop. 1 Groundwater Grant, P.I.: O'Day): "City of Modesto Wellfield RI/FS", 04/15/2019 to 9/30/2020, \$36,700.

Department of Energy, Environmental Management, Minority Serving Institutions Partnership Program (P.I.: O'Day; co-PI's: M. Beutel, S. Traina): "Manganese and iron oxide-modified activated carbon for the remediation of mercury-contaminated sediment and water", 01/09/2019 to 01/30/2020, \$299,808.

California Sea Grant College Program, 2018 Delta Science Fellows Program #5298 (P.I.: O'Day for Stefanie Helmrich, Graduate Student Fellowship Award): "Simulating methylmercury production and transport at the sediment-water interface to improve water quality in the Delta", 1/22/2018 to 1/21/2020, \$151,403.

Department of Energy, Subsurface Biogeochemistry Research Program Exploratory Award (P.I.: O'Day; co-PI's: S. Hart, A. Berhe, M. Fogel): "Experimental and modeling investigation of the impact of atmospherically deposited phosphorus on terrestrial soil nutrient and carbon cycling, and ecosystem productivity", 08/15/16 to 08/14/18, \$200,000.

National Science Foundation, Environmental Chemical Sciences Program CHE-1213407 (P.I. O'Day): "Collaborative research: Quantifying the reactive surface area of environmental solids", 10/01/12 to 09/31/16, \$300,000.

Department of Energy, Subsurface Biogeochemistry Research Program (P.I.: J. Chorover, Univ. of Arizona; O'Day UCM P.I.): "Uranium and strontium fate in waste-weathered sediments: Scaling of molecular processes to predict reactive transport" 09/15/11 to 11/30/15, O'Day award: \$300,126.

Department of Energy, Subsurface Biogeochemistry Research Program (P.I.: O'Day; co-PI's: S. Traina, H. Beller, C. Steefel): "Molecular mechanisms and kinetics of microbial anaerobic, nitrate-dependent U(IV) and Fe(II) oxidation," 09/15/10 to 11/30/14, \$781,992.

Department of Energy, Environmental Remediation Sciences Program (P.I.: J. Chorover, Univ. of Arizona; O'Day UCM P.I.): "Release of aged contaminants from weathered sediments: Effects of sorbate speciation on scaling of reactive transport" 08/15/08 to 08/14/12, O'Day award: \$251,002.

NIH-NIEHS Superfund Research Program, (P.I.: O'Day): ARRA Administrative Supplement for "Sequestration and immobilization of metal and metalloid contaminants in sediments," 09/15/09 to 08/31/11, \$219,459.

NIH-NIEHS Superfund Research Program, (P.I.: O'Day): ARRA Supplement for Summer Research Experiences for Undergraduate Students, 06/01/09 to 08/31/11, \$7,782.

NIH-NIEHS Superfund Research Program (P.I.: O'Day): "Sequestration and immobilization of metal and metalloid contaminants in sediments," 09/01/07 to 08/31/11, \$802,671.

Department of Defense, Strategic Research and Development Program (P.I.: J. Hering, Caltech; O'Day co-P.I.): "Environmental fate and exposure assessment for arsenic in groundwater," sub-contract from Caltech, 12/01/08 to 12/31/09, O'Day award: \$156,000.

National Science Foundation, Instrumentation & Facilities (P.I.: S. Traina; co-P.I.'s: R. Bales, M. Conklin, T. Harmon, P. O'Day): "Technician Support Phase I: A multi-purpose environmental analytical laboratory at UC Merced," 12/15/05 to 12/14/08 (+1 year no-cost extension), \$224,979.

National Science Foundation, Hydrologic Sciences Program (P.I.: O'Day): "Spatial and temporal changes in arsenic, iron, and sulfur speciation in a shallow aquifer," 08/15/04-7/31/07 (+1 year no-cost extension), \$270,000.

Department of Energy, Environmental Remediation Sciences Program (P.I.: J. Chorover, Univ. of Arizona; O'Day UCM P.I.): "Coupling sorption to soil weathering during reactive transport: impacts of mineral transformation and sorbate aging on contaminant speciation and mobility," 2/01/06-1/31/08 (+1 year no-cost extension), O'Day award: \$200,513.

National Science Foundation, Major Research Instrumentation (P.I.: O'Day; co-P.I.'s S. Traina, V. Leppert): "MRI: Acquisition of a powder X-ray diffractometer for environmental and materials research at UC Merced," 08/01/06-07/31/08, \$187,407.

Department of Defense, Strategic Research and Development Program (P.I.: J. Hering, Caltech; O'Day co-P.I.): "Environmental fate and exposure assessment for arsenic in groundwater," sub-contract from Caltech, 1/01/05-12/31/07, O'Day award: \$159,813.

National Science Foundation, Major Research Instrumentation (P.I.: O'Day; co-P.I.'s S. Traina, V. Leppert): "Acquisition of a scanning electron microscope for environmental, biological, and materials research and education at UC Merced," 8/01/04-7/31/07, \$323,743.

National Science Foundation, Environmental Engineering (P.I.: O'Day): "Collaborative Research: Biogeochemical controls on arsenic remobilization from sediments," with J.G. Hering (Caltech), 8/01/02-7/31/05, O'Day award: \$210,466.

Department of Energy, Environmental Management Science Program (P.I.: J. Chorover, Univ. of Arizona; O'Day UCM P.I.): "Caustic waste-soil weathering reactions and their impacts on trace contaminant migration and sequestration," 9/15/02-9/14/05, O'Day award: \$265,000.

National Science Foundation, Hydrologic Sciences Program (P.I.: O'Day): "Molecular characterization and reaction mechanisms of arsenic speciation in stream hyporheic zone sediments," 7/1/00-6/30/03 (+ 1-year no-cost extension), \$191,556.

National Aeronautics and Space Administration, Astrobiology Institute: "Exploring the living universe: Origin, evolution, and distribution of life in the solar system," (P.I.'s J. Farmer and 12 others). Module 1B (P.I.'s: J. R. Holloway and P.A. O'Day) "Organic synthesis at high temperatures," 8/15/98-8/14/03; Module 1B award: \$688,693.

National Science Foundation (P.I.: O'Day; co-P.I. S.C. Cary, Univ. of Delaware): "NER: Molecular-to-microscale investigation of microbial habitats: Exploratory studies using molecular probes and microcomputed tomography and fluorescence," 7/15/02-7/14/03, \$94,736.

W. M. Keck Foundation (P.I.: E. Shock, ASU; O'Day one of 3 co-P.I.'s): "Laboratory for Environmental Biogeochemistry," \$900,000 for ICP-MS instrumentation, 7/15/02-7/14/05.

National Science Foundation, Biocomplexity Program (Incubation Activity) (P.I.'s, S. C. Cary, P. A. O'Day, J. R. Holloway): Origins of biocomplexity: Colonization and succession of microbial communities in a dynamic geochemical environment, 12/01/00-11/30/02, \$86,954.

National Science Foundation, Faculty Early Career Development Program, Petrology & Geochemistry Program (P.I.: O'Day): "Metal partitioning and surface reactions in natural and model systems: Research and education," 6/01/96-7/31/00 (+1 year no-cost extension), \$205,540. Research Experiences for Undergraduates supplement awarded 6/01/97, \$2,000.

Department of Energy, Environmental Science Management Program (P.I.'s S. A. Carroll, C. J. Bruton, Lawrence Livermore National Laboratory): "Experimental determination of contaminant metal mobility as a function of temperature, time, and solution chemistry," 1/01/97-3/30/00; subcontract from LLNL (P.I.: O'Day): \$172,718.

Petroleum Research Fund Type G Grant (P.I.: O'Day): "Determination of oxygen isotope ratios of clay minerals *in situ* using secondary ion mass spectrometry (SIMS)," 1/1/97-8/31/00, \$20,000.

Lawrence Livermore National Laboratory (Department of Defense (Navy) subcontract, P.I.: O'Day): "Speciation of metals in sediments at Naval Air Station, Alameda, CA, using X-ray absorption spectroscopy," 10/1/97-9/30/99, \$26,426.

Lawrence Livermore National Laboratory (DOE subcontract, P.I.: O'Day): "Characterization of toxic sediments using X-ray absorption spectroscopy," 1/26/96-9/30/97, \$26,736.

National Science Foundation, Earth Sciences Postdoctoral Research Fellowship Program (P.I.: O'Day): "Theoretical development of thermodynamic equations of state for surface complexes," (faculty sponsor: H.C. Helgeson, U.C. Berkeley), 11/92-11/94, \$70,000.

### **Awards at User Facilities**

Continuous active user proposals at the Stanford Synchrotron Radiation Lightsource (SSRL) since 1995; additional user awards for time at the Canadian Light Source (CLS, Saskatchewan, Canada), the Advanced Light Source (ALS, Berkeley National Lab), Advanced Photon Source (APS, Argonne National Lab), European Synchrotron Radiation Facility (ESRF, Grenoble, France), National Synchrotron Light Source (NSLS, Brookhaven National Lab), and the Environmental Molecular Science Laboratory (EMSL, Pacific Northwest National Lab).

## **TEACHING & MENTORING**

### **COURSES TAUGHT**

#### **UC Merced**

*Fundamentals of Soil Science (ESS 170)*: Upper division undergraduate (co-taught with S. Traina, 1 semester)

*Environmental Chemistry and Laboratory (ESS 100)*: Upper division undergraduate and graduate sections (7 semesters; co-taught with M. Conklin, 3 semesters)

*Geochemistry of Earth Systems (ESS 103/ES 203)*: Graduate and upper division undergraduate (6 semesters)

*Instrumental and Spectroscopic Methods in Environmental Systems (ES 206)*: Graduate (2 semesters)

*Introduction to Earth Systems Science: Online/hybrid (ESS 1)* Undergraduate, general science (2 semesters). Funding from UC Innovative Learning Technology Initiative for online development.

*Fundamentals of Geology and Laboratory (ESS 20)*: Undergraduate, general science (4 semesters)

*Earth Resources and Society (ESS 10)*: Undergraduate, general science (1 semester)

*Introduction to Earth Systems Science (ESS 1)*: Undergraduate, general science (3 semesters)

*Soil Foundations of Terrestrial Ecosystems (ESS 70)*: Lower division undergraduate (co-taught with S. Traina, 1 semester)

*Environmental Systems Directed Group Study: Geochemistry and Reactive Transport (ES 298)*: Graduate (2 semesters)

*Special Topics in Environmental Systems: Environmental Science and Policy: Case studies and current topics (ES 292)*. Graduate and upper-division (1 semester)

*Environmental Systems Seminar (ES 291)*, Graduate seminar/discussion (2 semesters)

*Freshman Seminar: Introduction to the Geology of Yosemite National Park and the Sierra Nevada*. Freshman seminar (2 semesters).

### **Arizona State University**

*Introduction to Physical Geology*: Undergraduate, non-major, general science class (3 semesters)

*Environmental Geology & Environmental Geology Laboratory*: Undergraduate, non-major, general science class (4 semesters)

*Geochemistry*: Upper-division undergraduate and graduate, cross-listed in Geological Sciences and Chemistry & Biochemistry (5 semesters)

*Special Topics in Aqueous Geochemistry*: Graduate seminar (2 semesters)

*Chemical Hydrogeology*: Upper-division undergraduate and graduate (2 semesters)

*Experiments in Biogeochemistry*, co-taught with F. Garcia-Pichel: Upper-division undergraduate/graduate; cross-listed in Geological Sciences, Microbiology, Chemistry & Biochemistry (1 semester)

*Analytical Methods in Geological Sciences*, co-taught with J. Holloway or T. Sharp: Upper-division undergraduate and graduate (2 semesters)

*Seafloor/Planetary Hydrothermal Systems*, co-taught with J. Holloway: Graduate seminar (1 semester)

*Geochemistry and Petrology of Planetary Systems*, co-taught with J. Holloway: Graduate seminar (1 semester)

### **Current Students, UC Merced**

Paul Aronstein (Ph.D.), Edwin Rivas Meraz (Ph.D.), Danielle Jones (Ph.D., co-advisor)

### **Theses & Dissertations Supervised, UC Merced**

Stefanie Helmrich, Ph.D. (2022) "Development of Numerical Models to Predict Cycling of Mercury and Salt in Freshwater." Environmental Systems.

Alexander Leven, M.S. (2017) "Fate of Redox-Active Manganese Oxide Minerals as an *In Situ* Treatment for Mercury-Contaminated Sediments." Environmental Systems.

Molly Small, M.S. (2014) "Surface Complexation and Reactivity of Kaolinite and Gibbsite with Cadmium: A Multi-Method Approach." Environmental Systems.

Rasesh Pokharel, M.S. (2013) "Oxidative Dissolution of Bio-U(IV)O<sub>2</sub>(s) in the Presence of Nitrate and Iron Under Anaerobic Conditions Using Flow-Through Columns." Environmental Systems.

Nelson A. Rivera, Ph.D. (2011) "Sequestration and Release Mechanisms of Strontium and Cesium in Zeolite/Feldspathoid Systems and Laboratory Reacted Hanford Sediments." Environmental Systems.

Robert A. Root, Ph.D. (2009) "Arsenic Mobility in Suboxic Environments: The Role of Phosphate Competition and Green Rust Mineralization," Environmental Systems.

**Theses & Dissertations Supervised, Arizona State University**

- Ken M. Voglesonger, Ph.D. (2004) "Experimental and Field Studies of Seafloor Hydrothermal Systems," co-advised with John Holloway, Geological Sciences.
- Nelson A. Rivera, M.S. (2004) "Arsenate Removal by Zero Valent Iron," Geological Sciences.
- Adam Jew, B.S. (2004) "Arsenic Speciation in Sediments at Haiwee Reservoir, Eastern California," Undergraduate Thesis, Geological Sciences.
- Robert A. Root, M.S. (2003) "Arsenic and Iron Speciation and Natural Attenuation in a Tidally Influenced Shallow Aquifer: Reaction and Transport Mechanisms," Geological Sciences.
- Dawn A. Ashbridge, M.S. (2002) "Chemical and Physical Analysis of Seafloor Hydrothermal Vent Chimneys," Geological Sciences.
- Jill E. Best, M.S. (2002) "Geochemical Characterization and Modeling of Trace Metal Substitution in Manganese Oxide Precipitates from Pinal Creek," Geological Sciences.
- Katherine E. Geiger, M.S. (1999) "Characterization and Distribution of Transition Metals in Manganese Oxides from a Mining-Contaminated Stream, Pinal Creek, Arizona," Geological Sciences.
- Margaret A. Ebert, B.S. (1998) "Characterization of Zinc Hydroxide Precipitates using X-Ray Absorption Spectroscopy," Undergraduate Honors College Thesis, Chemistry & Biochemistry.
- Lara E. Heister, M.S. (1997) "The Petrogenesis of Tertiary Phonolitic Volcanism, Gronau West Nunatak, East Greenland," Geological Sciences.

**Dissertation Committees at Other Universities**

- Miguel Angel Gomez Gonzalez, Ph.D. (2015), Instituto de Ciencias Agrarias, CSIC, Madrid, Spain
- Carin Sjöstedt, Ph.D. (2012) KTH, Stockholm, Sweden, Faculty Opponent
- Martin Helmhart, Ph.D. (2012), Instituto de Ciencias Agrarias, CSIC, Madrid, Spain, co-advisor
- Sarah Hayes, Ph.D. (2010), Soil, Water, and Environmental Sciences, University of Arizona
- Hannah Gilbert, M.S. (2003) Hydrology & Water Resources Department, University of Arizona
- John Villinski, Ph.D. (2001) Hydrology & Water Resources Department, University of Arizona
- Kaye Savage, Ph.D. (2001) Geological & Environmental Sciences Department, Stanford University

**Post-Doctoral Research Scholars Supervised, current affiliation**

- Ajith Pattammattel, 2016-2018 (Ph.D. Univ. of Connecticut), National Synchrotron Lightsource, Brookhaven National Laboratory, NY
- Ugwumsinachi Godwin Nwosu, 2017-2018 (Ph.D. Louisiana State University), Exxon-Mobil, TX
- Nancy Birkner, 2015-2016 (Ph.D. UC Davis) Clemson University
- Estela Reinoso-Maset, 2013-2015 (Ph.D. University of Plymouth, UK), Centre for Environmental Radioactivity, Norwegian University of Life Sciences
- Elizabeth Neubaur, 2014 (Ph.D. University of Vienna), private consulting
- Maria Pilar Asta, 2010-2012 (Ph.D. University of Barcelona), Faculty, University of Granada, Spain
- Masakazu Kanamatsu, 2011-2012 (Ph.D. University of California, Davis), Anchor, QEA, Portland, OR
- Susana Serrano, 2007-2010 (Ph.D., CSIS, Madrid, Spain), GAB Consulting, Valencia, Spain
- Virginia Illera, 2004-2010 (Ph.D., CSIC, Madrid, Spain), education
- Sunkyoung Choi, 2005-2008 (Ph.D., Yonsei University, Seoul, S. Korea), U.S. EPA, Ada, OK
- Nita Sahai, 1997-1998 (Ph.D., Johns Hopkins University), Faculty, The University of Akron

**SERVICE AND PROFESSIONAL ACTIVITIES**

**Department, School, and University Service, UC Merced**

- Chair, Senate Committee on Academic Personnel, 2022-current
- UC Academic Council Special Committee on Laboratory Issues (ACSCOLI), 2018-current
- Chair, Environmental Systems Graduate Group, Educational Policy Committee, 2022-current

Environmental Analytical Laboratory Advisory Committee, Member, 2017-current  
 Imaging and Microscopy Facility, Advisory Committee Member, 2016-current  
 Environmental Systems Graduate Group, Educational Policy Committee, Member, 2020-2022  
 Senate Committee on Academic Personnel, Member, 2020-2022  
 Senate Committee on Committees, Member (elected), 2020-2022  
 Chair, Life and Environmental Sciences Department, 2016-2019  
 UC Vice-President for National Laboratories, Search Committee Member, 2019  
 Carson House Living Learning Community, Advisory Committee Member, 2018-2019  
 Dean's Council, Transition Oversight Committee, Member, 2018-2019  
 Chair, Provost Review Committee, 2017  
 Academic Senate Review Committee, Member, 2017  
 co-Chair, Sustainability Search Committee Cluster Hire, 2016-2017  
 Senior Management Dean Review Committee, Member, 2016  
 Chair, Environmental Systems Graduate Group, 2013-2016  
 Sierra Nevada Field Station Advisory Committee, Member, 2015-2016  
 Faculty Lead, Earth Systems Science major, Natural Sciences, 2012-2015  
 Cross-unit Natural Resources Management Search, Committee Member, 2013-2014  
 Chair, Academic Senate, Merced Division, 2012-2013  
 Academic Council Member, UC Systemwide Academic Senate, 2012-2013  
 Vice-Chancellor for Business and Administrative Services, Search Committee Member, 2013  
 Vice-Chancellor for Academic Planning and Budget, Search Committee Member, 2012-2013  
 Cross-unit Natural Resources Management, Search Committee Member, 2012-2013  
 Vice-Chair, Academic Senate, Merced Division, 2011-2012  
 Academic Personnel Chair, Life and Environmental Sciences Faculty, 2011-2012  
 Provost/EVC Search, Committee Member, 2011-2012  
 Chair, Ecology Search Committee, Natural Sciences, 2011-2012  
 Commission on the Future of UC, Education & Curriculum Working Group Member, 2009-2010  
 Chair, Senate Committee on Rules and Elections, and Merced Division Secretary, 2008-2010  
 Dean of Engineering, Search Committee Member, 2010  
 Chair, University Committee on Promotion and Tenure, 2008-2009  
 Chair, University *Ad Hoc* Committee on General Education, 2008-2009  
 Chair, Natural Sciences Curriculum Committee, 2008-2009  
 Natural Sciences, Academic Personnel Committee Member, 2007-2009  
 Natural Sciences, Earth Systems Science major, Faculty Lead, 2004-2009  
 Environmental Systems Graduate Group, Academic Advising and Policy Committee, 2007-2010  
 Sierra Nevada Research Institute, Environmental Analytical Lab Users Committee, 2007-2010  
 Chair, Senate Undergraduate Council, 2007-2008  
 Chair, Natural Sciences, Ecology Search Committee, 2007-2008  
 Senate Undergraduate Council, Vice-Chair and BOARS representative, 2005-2007  
 Senate Graduate Council & Committee on Research, Member, 2006-2007  
 Chair, Sierra Nevada Research Institute Advisory Board 2005-2007  
 Natural Sciences, Microbial Ecology Search Committee Member, 2006-2007  
 Chair, Natural Sciences Strategic Planning Committee, 2005-2006  
 Chair, Natural Sciences Ecosystems/Ecology Search Committee, 2005-2006  
 Natural Sciences, Analytical Chemistry Search Committee Member, 2005-2006 & 2006-2007  
 Natural Sciences, Interdisciplinary Physical Sciences Search Committee Member, 2005-2006  
 Chair, Cross-unit Materials Science & Engineering Search Committee, 2005-2006  
 Cross-unit Environmental Policy Search Committee Member, 2005-2006  
 Senate Graduate Council & Committee on Research, Member, 2004-2005  
 Chair, Senate Graduate Council & Committee on Research, and CCGA representative 2003-2004  
 Faculty Steering Committee, Imaging and Microscopy Facility, 2004-2009

Natural Sciences, Organic Chemistry Search Committee Member, 2004  
Chair, Natural Sciences, Ecosystem Science Search Committee, 2003-2004  
Natural Sciences, Microbiology Search Committee Member, 2003-2004

**Department, College, and University Service, Arizona State University**

Department of Geological Sciences, Graduate Committee, 2002-2003  
Geological Sciences & Chemistry & Biochemistry, Search Committee, Biogeochemistry, 2003  
College of Liberal Arts & Sciences, Search Committee, Terrestrial Biogeochemistry, 2002  
Graduate College Committee, ASU Responsive Ph.D. Initiative, 2002  
University Delegate, Universities Council on Water Resources, 1999-2003  
Geology Department, Head Undergraduate Advisor, Curriculum Committee Chair, 1996-2000  
Geology Department, Safety Officer, 1995-2000  
College of Liberal Arts & Sciences Search Committee, Senior Development Officer, 1999  
Geology Department, Department Chair Search Committee, 1998-1999  
Geology Department, Personnel Committee, 1998  
Center for Solid State Science, Executive Committee Member, 1997-1999  
Geology Department, Biogeology Search Committee and Affirmative Action Representative, 1996-1997  
Southwest Center for Education and the Natural Environment Outreach Committee, 1995-1997

**PROFESSIONAL SERVICE & ACTIVITIES**

National Academy of Sciences, National Research Council Committee on on Electric Arc Furnace Slag:  
Understanding Human Health Risks from Unencapsulated Uses, 2022-current  
Department of Energy, Earth Systems Science Program, Proposal Review Panel, 2021  
Department of Energy, Energy Frontier Research Centers Management Review Panel, 2019  
National Science Foundation, Environmental Chemical Sciences, Proposal Review Panel, 2018  
Department of Energy, Subsurface Biogeochemistry Research Program, Argonne National Lab Science  
Focus Area Review Panel, 2018  
Editorial Review Board, *Geochemical Transactions*, 2006-2017  
National Academy of Sciences, National Research Council Committee on Sources of Lead Contamination  
at or near Superfund Sites, 2016-2017  
Symposium Co-organizer, American Chemical Society National Meeting, Geochemistry Division, 2017  
National Science Foundation, Midscale Instrumentation Workshop, 2016  
Department of Energy, PECASE Review Committee, 2016  
National Science Foundation, Environmental Chemical Sciences, Proposal Review Panel, 2015  
National Science Foundation, National Nanotechnology Coordinated Infrastructure, Proposal Review  
Panel, 2015  
Associate Editor, *Geochimica et Cosmochimica Acta*, 2001-2012  
Department of Energy, Subsurface Biogeochemistry Research Program, Argonne National Lab Science  
Focus Area Review Panel, 2012  
Department of Energy, Environmental Molecular Sciences Lab, User Proposal Review Panel, 2012  
Invited workshop on “International Drilling to Recover Aquifer sands (IDRAs)”, Hanoi, Vietnam, 2011  
Department of Energy, Subsurface Biogeochemistry Research Program, Pacific Northwest National Lab  
Science Focus Area Review Panel, 2011  
National Institute of Environmental Health Sciences (NIEHS)-NIH, Superfund Research Program Special  
Emphasis Panel co-Chair, 2010  
Columbia University, NIEHS Superfund Basic Research Program, Advisory Board, 2005-2012  
National Science Foundation, Earth Sciences Instrumentation & Facilities Review Panel, 2009  
Mineralogical Society of America, Awards Committee, 2008-2010  
EnviroSync Steering Committee, 2007-2009  
Penn State University, Cyberinfrastructure and Research Facility, Advisory Board, 2006-2009

Department of Energy, Environmental Remediation Sciences Program, Argonne National Lab Science Focus Area Review Panel, 2009  
Department of Energy, Basic Energy Sciences, Geosciences Program Review, 2009  
Department of Energy, Environmental Remediation Sciences Program, National Laboratory Science Focus Area Review Panel, 2008  
National Institute of Environmental Health Sciences, Superfund Research Program Review Panel, 2007  
Lawrence Berkeley National Laboratory, Review Committee, Earth Sciences Division, 2005  
National Science Foundation, Earth Sciences Instrumentation & Facilities Review Panel, 2003-2006  
National Institute of Environmental Health Sciences, Superfund Research Program Review Panel, 2004  
Federal Agencies Workshop, Conceptual Model Development for Subsurface Reactive Transport Modeling of Inorganic Contaminants, Radionuclides, and Nutrients, Participant, 2004  
American Chemical Society, Geochemistry Division, Program Chair, 2001; Chair, 2002  
National Science Foundation, Nanoscience Program Review Panel, 2002  
National Science Foundation, IGERT Proposal Review Panel, 2002  
Interdisciplinary Workshop on Nanogeoscience, Participant, 2002  
Mineral & Rock Physics Committee Member, American Geophysical Union, 2000-2002  
GeoSync Society, American Geophysical Union, Chair, 2000-2001  
Consortium for Advanced Radiation Sources, Advanced Photon Source, Board of Governors, 1999-2001  
NASA Astrobiology Institute, Roadmap Planning Workshop Participant, 1998  
NASA Deep-Sea Hydrothermal Vent System Workshop Participant, 1998  
National Science Foundation, Environmental Geochemistry and Biogeochemistry Program, Proposal Review Panel, 1997  
National Science Foundation/Environmental Protection Agency, Joint Program in Water and Watersheds, Proposal Review Panel, 1997  
Stanford Synchrotron Radiation Laboratory, User's Organization Executive Committee, 1995-1997

#### **CONTRIBUTIONS TO OUTREACH, DIVERSITY, AND INCLUSIVITY**

External Advisory Board member for "*This American Land*", public television news program on conservation and science produced by Environmental Trust News (non-profit), 2016-present  
FACTS Summer Bridge Program mentor, 2021 and 2022  
UC Women's Initiative for Professional Development, 2018-2019  
Sierra Club, Merced Chapter, public presentation, April, 2019  
Faculty Mentor, USDA-HSI Scholars Program (summer 2012 and 2013)  
Faculty Mentor, NSF REU Site, UC Merced Summer Yosemite Research Training in Environmental Science, 2008  
Yosemite Institute/SNRI, Teacher Training Workshop, 2004  
Castle Science and Technology Center, Speaker, 2004  
UC Alumni Association, San Joaquin Valley, Speaker, 2003  
Sally Ride Foundation Festival, Arizona State University, Speaker, 2003  
Arizona State University, NSF-IGERT Program in Urban Ecology, Faculty Participant, 2001-2003  
Arizona State University, NSF Graduate Teaching Fellowship Program, Development of K-12 Science Teachers, Faculty Participant, 2001-2003.  
Arizona Mining Association, Summer Teacher Training Workshop, 1999 and 2000