

CHRISTOPHER I. OLIVARES

Assistant Professor Civil & Environmental Engineering
Henry Samueli School of Engineering University of California, Irvine
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EDUCATION

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|---|---------------------------|-----------|
| Ph.D., Environmental Engineering | The University of Arizona | Jan. 2016 |
| Dissertation title: "Environmental fate, (bio)transformation, and toxicology of 2,4-dinitroanisole (DNAN) in soils and wastewater sludge" | | |
| M.A., French literature and culture | The University of Arizona | May 2015 |
| B.S., Chemical Engineering, Honors | The University of Arizona | May 2011 |
| B.A., French | The University of Arizona | May 2011 |

RESEARCH & PROFESSIONAL EXPERIENCE

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|---|------------------------------------|------------------------|
| Postdoctoral Scholar | University of California, Berkeley | April 2017-Mar. 2021 |
| Postdoctoral Fellow | Clemson University | Feb 2016 – Mar. 2017 |
| Graduate Research Assistant | The University of Arizona | Aug 2011 – Jan. 2016 |
| KC Donnelly Externship | Oregon State University | July 2014 – Aug. 2014 |
| Veolia Summer School | Veolia France | July 2013 |
| Superfund Trainee Program | The University of Arizona | Aug. 2012 – May 2014 |
| Summer Intern | Petróleos Mexicanos | June 2010 – Aug. 2010 |
| Undergraduate Research Assistant | The University of Arizona | Jan. 2008 to June 2011 |

MAJOR AWARDS AND FELLOWSHIPS

- United Nations 2019 UNLEASH Innovation Lab Talent-Water & Sanitation, Shenzhen, China, 2019
- Outstanding Graduate Student, Chemical & Environmental Engineering, Fall 2015
- Best Oral Presentation. University of Arizona CHEE Graduate Research Symposium, 2014
- Water Sustainability Program Fellowship, 2014-2015
- NIEHS SRP KC Donnelly Externship Award, 2014
- Best Oral Presentation, Earth Week 2014. University of Arizona, 2014
- NIEHS SRP Trainee Program Fellowship University of Arizona 2012-2013, 2013-2014
- Mexican National Council of Science and Technology (CONACyT) Fellowship, 2011-2015
- University of Arizona College of Engineering Fellowship, 2011-2012

GRANT WRITING EXPERIENCE

Develop a treatment train for in situ mineralization of PFOS using heat-activated persulfate oxidation (HAPO). Lisa Alvarez-Cohen (PI, University of California, Berkeley). Role: Helped write and submit proposal, as well as addressing reviewers' comments. SERDP. \$283,000. Awarded.

A simple and robust forensic technique for differentiating PFAS associated with AFFF from other PFAS Sources. David Sedlak (PI, University of California, Berkeley). Role: Helped write and submit proposal, as well as addressing reviewers' comments. SERDP. \$1,500,000. Awarded.

Ecotoxicity of 2,4-dinitroanisole (DNAN) and its (bio)transformation products. Christopher I. Olivares (Univ. of Arizona), Jim A. Field (Univ. of Arizona), Reyes Sierra-Alvarez (Univ. of Arizona), Robert Tanguay (Oregon State University). NIEHS KC Donnelly Externship 2014. \$ 8,000. Awarded.

SCIENTIFIC PUBLICATIONS

1. **Olivares, C. I.**; Uzun, H.; Erdem, C. U.; Zhang, W.; Trettin, C.; Liu, Y.; Burton, S. D.; Robinson, E. W.; Karanfil, T.; Chow, A. T., Increased Organohalogen Diversity after Disinfection of Water from a Prescribed Burned Watershed. *ACS ES&T Water* 2021.
2. Uzun, H.; Dahlgren, R., **Olivares, C. I.**; Erdem, C. U.; Karanfil, T.; Chow, A. T. 2020. Effect of prescribed fires on the export of dissolved organic matter, precursors of disinfection by-products, and water treatability. *Water Res*, 187, 116385
3. Uzun, H.; Dahlgren, R., **Olivares, C. I.**; Erdem, C. U.; Karanfil, T.; Chow, A. T. 2020. Two years of post-wildfire impacts on dissolved organic matter, nitrogen, and precursors of disinfection by-products in California stream waters. *Water Res*, 181, 115891
4. **Olivares, C. I.**; Zhang, W.; Uzun, H.; Erdem, C. U.; Majidzadeh, H.; Trettin, C. C.; Karanfil, T.; Chow, A. T. 2019. Optical in-situ sensors capture dissolved organic carbon (DOC) dynamics after prescribed fire in high DOC forest watersheds. *Intl J Wildland Fire*, 28, 761-768
5. Majidzadeh, H., Chen, H., Coates T.A., Tsai, K.-P., **Olivares, C.I.**, Trettin, C., Uzun, H., Karanfil, T., Chow, A. T. 2019. Long-term watershed management is an effective strategy to reduce organic matter export and disinfection by-product precursors in source water. *Intl J Wildland Fire* 28, 804-813
6. Hogan, D.E., Tian, F., Malm, S., **Olivares, C.I.**, Palos Pacheco, R., Simonich, M.TM, Hunjan, A.S., Tanguay, R.L., Klimecki, W.T., Polt, R., Pemberton, J.E., Curry J.E., Maier, R.M. 2019. Biodegradability and toxicity of monorhamnolipid biosurfactant diastereomers. *J Hazard Mater* 364. 600-607
7. Khatiwada, R., **Olivares, C.I.**, Abrell, L., Root, R., Sierra-Alvarez, R., Field, J.A., Chorover, J. Oxidation of reduced daughter products from 2,4-dinitroanisole. 2018. *Chemosphere* 201: 790-798
8. **Olivares, C.I.**, Madeira, C.L., Sierra-Alvarez, R., Kadoya, W., Abrell, L., Chorover, J., Field, J.A. Environmental fate of ¹⁴C radiolabeled 2,4-dinitroanisole (DNAN) in soil microcosms. 2017. *Environ Sci. Technol.* 51(22): 13327-13334
9. Liu, C., **Olivares, C.I.**, Pinto, A.J., Lauderdale, C., Brown, J., Selbes, M., Karanfil, T. 2017. The control of disinfection byproducts and their precursors in biologically active filtration processes. *Water Res.* 124: 630-653
10. **Olivares, C.I.**, Field, J.A., Sierra-Alvarez, R., Abrell, L., Chorover, J., Simonich, M., Tanguay, R.L. 2016. Zebrafish embryo toxicity of anaerobic biotransformation products from the insensitive munitions compound 2,4-dinitroanisole (DNAN) *Environ. Toxicol. Chem.* 35(11): 2774-2781
11. **Olivares, C.I.**, Sierra-Alvarez, R., Alvarez-Nieto, C., Abrell, L., Chorover, J., Field, J.A. 2016. Microbial Toxicity of DNAN (bio)transformation product mixtures characterized by LC-QToF-MS and individual model compounds/surrogates of transformation products *Chemosphere* 154:499-506.
12. **Olivares, C.I.**, Sierra-Alvarez, R., Field, J.A., Simonich M., Tanguay R.L. 2016. Arsenic (III, V), indium (III), and gallium (III) toxicity to zebrafish embryos using a high-throughput multi-endpoint in vivo developmental and behavioral assay. *Chemosphere.* 148: 361-368
13. **Olivares, C.I.**, Abrell, L., Khatiwada, R., Chorover, J., Sierra-Alvarez, R., Field, J.A. 2015. (Bio)transformation of 2,4-dinitroanisole (DNAN) in soils. *J. Hazard. Mater.* 304: 214-221
14. **Olivares, C.I.**, Wang, J., Silva Luna, C.D., Field, J.A., Abrell, L., Sierra-Alvarez, R. 2015. Continuous treatment of N-methyl-*p*-nitro aniline (MNA) in an Upflow Anaerobic Sludge Blanket (UASB) bioreactor. *Chemosphere.* 144: 1116-1122

15. Krzmarzick, M. J., Khatiwada, R., **Olivares, C.I.**, Abrell, L., Sierra-Alvarez, R., Chorover J., Field J.A. 2015. Biotransformation and degradation of the insensitive munition compound, 5-nitro-1,2,4-triazol-3-one (NTO), by soil bacterial communities. *Environ Sci Technol* 49(9):5681-5688.
16. Jidong, J., **Olivares, C.I.**, Field, J.A., Sierra-Alvarez, R. 2013. Microbial toxicity of 2,4-dinitroanisole (DNAN) and its aromatic amine metabolites. *J Hazard Mater* 262: 281-287
17. **Olivares, C. I.**, Liang, J., Abrell, L., Sierra-Alvarez, R., Field, J.A. 2013. Pathways of reductive 2,4-dinitroanisole (DNAN) biotransformation in sludge, *Biotechnol Bioengr* 113: 1595-1604

BOOK CHAPTER

Olivares, C.I., Abrell, L., Chorover, J., Simonich, M., Tanguay, R., Sierra-Alvarez, R., Field, J.A. Identifying toxic biotransformation products of the insensitive munitions compound, 2,4-dinitroanisole (DNAN), using liquid chromatography coupled to quadrupole time-of-flight mass spectrometry (LC-QToF-MS) in *Assessing Transformation Products of Chemicals by Non-Target and Suspect Screening – Strategies and Workflows Vol. 1*, Drewes, J. and T. Letzel (Eds). 2016 ACS Books. pp.133-145

ORAL PRESENTATIONS (* presenter)

1. **Olivares, C.I.*** Interactions between polyfluorinated compounds in aqueous film forming foams and bioremediation of BTEX and TCE. ACS Spring 2021 Meeting. Virtual. April 14, 2021.
2. **Olivares, C.I.*** Fire-fighting Polyfluorinated Compounds and Bioremediation of Hydrocarbons and Chlorinated Solvents. University of California, Irvine. Jan. 29, 2021.
3. **Olivares, C.I.*** Interactions between polyfluorinated compounds in aqueous film forming foams and bioremediation of BTEX and TCE. Civil & Environmental Engineering Seminar. Colorado School of Mines. Golden, CO. Oct. 2, 2020.
4. **Olivares, C.I.*** Microbial biotransformation and toxicity of organic pollutants: Insights from mass spectrometry. Ecology Department Meeting. Earth & Environmental Science Division. Lawrence Berkeley National Laboratory. Berkeley, CA. July 2, 2020
5. **Olivares, C.I.***, Cook, E.K., Troyer, E., Sun, Y., Tsou, K., Yi, S., Sedlak, D.L., Alvarez-Cohen, L., Combined persulfate chemical oxidation and bioremediation as in-situ strategies for AFFF and BTEX co-contaminant impacted sites. 257th American Chemical Society Annual Meeting. Orlando, FL. Mar. 30-Apr. 4, 2019
6. Cook, E.K.*, **Olivares, C.I.**, Ocasio, D., Deeb, R., Hawley, E., Marvin, B., Kornuc, J., Sedlak, D.L., Alvarez-Cohen, L., Field demonstration design of heat-activated persulfate in situ chemical oxidation (ISCO) of PFASs in Jacksonville, FL. 257th American Chemical Society Annual Meeting. Orlando, FL. Mar. 30-Apr. 4, 2019
7. Cook, E.K.*, Sun, Y., **Olivares, C.I.**, Yi, S., Sedlak, D.L., Alvarez-Cohen, L. Combining bioremediation and in situ chemical oxidation for treatment of aqueous film forming foams (AFFFs) in groundwater. 255th American Chemical Society National Meeting. New Orleans, LA. Mar. 18-22, 2018.
8. **Olivares, C.I.***, Uzun, H., Erdem, C.U., Zheng, W., Coates, A.T., Trettin, C., Liu, Y., Robinson, E., Chow, A., Karanfil, T. Compositional changes to dissolved organic matter following prescribed fires on forested watersheds and their effect on drinking water supply. Association of Environmental Engineering & Science Professors 2017 Conference. Ann Arbor, MI, June 20-22, 2017.
9. Zhang, W.*, **Olivares, C.I.**, Uzun, H., Erdem, C.U., Trettin, C., Liu, Yina, Robinson, E.R., Karanfil, T. Export of dissolved organic carbon following prescribed fire on forested watersheds: Implications for watershed management for drinking water supply. 2016 American Geophysical Union Fall Meeting. San Francisco, CA. Dec. 12-16, 2016.

10. Uzun, H.*, **Olivares, C.I.**, Zhang, W., Erdem, C.U., Chow, T.A., Karanfil, T. Can prescribed fire reduce disinfection by-product precursor loading to source water? Water Quality Technology Conference. Indianapolis, IN. Nov. 13-17, 2016
11. Zhang, W. Uzun, H., Erdem, C.U., **Olivares, C.I.***, Coates, T.A., Rogers, M.-F., Karanfil, T., Chow, A. Exports of dissolved organic carbon and disinfection by-product precursors from prescribed burnt forests. Environmental Chemistry Division. 252nd American Chemical Society National Meeting. Philadelphia, PA, Aug. 21-25, 2016.
12. Field, J.*, Sierra-Alvarez, R., Krzmarzick, M., Madeira, C., **Olivares, C.I.**, Chorover J., Abrell, L. Biotransformation and biodegradation of insensitive munitions compounds in soil [Keynote talk] for Environmental Chemistry Session, Microbial and Molecular Tools to Determine the Fate and Biotransformation of Emerging Contaminants. 252nd American Chemical Society National Meeting. Philadelphia, PA, Aug. 21-25, 2016.
13. Field, J.A, Sierra-Alvarez, R., Krzmarzick, M., Madeira, C.L., **Olivares, C.I.***, Chorover, J., Abrell, L. Biotransformation pathways dictating the fate in soil of insensitive munition compounds, 2,4-dinitroanisole (DNAN) and 3-nitro-1,2,4-triazole-5-one (NTO). 2016 Society of Industrial Microbiology and Biotechnology Annual Meeting. New Orleans, LA. July 27, 2016.
14. Chow, A. and **Olivares, C. I.*** Fuel Reduction Techniques as Effective Forested Watershed Management Practices against Wildfire: Drinking Water Quality Aspects. Seminar. Environmental Molecular Sciences Laboratory (EMSL). Pacific Northwest National Lab. Richland, WA. July 14, 2016.
15. Abrell, L.*, **Olivares, C.I.**, Chorover, J., Sierra-Alvarez, R., Field, J.A. New 2,4-dinitroanisole (DNAN; munitions chemical) (bio)transformation products discovered and bioassayed using high resolution UPLC-QToFMS. 64th ASMS Conference on Mass Spectrometry, San Antonio, TX, USA, Jun 5-9, 2016.
16. **Olivares, C.I.***, Abrell, L., Simonich, M., Chorover, J., Sierra-Alvarez, R., Tanguay, R.L., Field, J.A. Coupling biotransformation of 2,4-dinitroanisole (DNAN) in anaerobic soil microcosms to a multidimensional toxicity assay using zebrafish embryos. 2015 Superfund Research Program Annual Meeting. San Juan, PR. Nov. 19, 2015.
17. **Olivares, C.I.***, Abrell, L., Simonich, M., Chorover, J., Sierra-Alvarez, R., Tanguay, R.L., Field, J.A. Coupling biotransformation of 2,4-dinitroanisole (DNAN) in anaerobic soil microcosms to a multidimensional toxicity assay using zebrafish embryos. Society of Environmental Toxicology and Chemistry North America 36th Annual Meeting. Salt Lake City, UT., Nov. 1-5, 2015.
18. **Olivares, C.I.***, Madeira, C.L., Abrell, L., Sierra-Alvarez, R., Chorover, J., Field, J.A. Environmental fate of 14C- ring labeled 2,4-dinitroanisole (DNAN) in anaerobic saturated soils. Environmental Chemistry Division. 250th American Chemical Society National Meeting. Boston, MA. Aug. 18, 2015.
19. **Olivares, C.I.***, Abrell, L., Sierra-Alvarez, R., Chorover, J., Field, J.A. Characterization of products of 2,4-dinitroanisole (DNAN) microbial biotransformation and their inhibitory impact to microorganisms. Environmental Chemistry Division. 250th American Chemical Society National Meeting. Boston, MA. Aug. 16, 2015.
20. **Olivares, C.I.***, Abrell, L., Sierra-Alvarez, R., Chorover, J., Field, J.A. Characterization of products of 2,4-dinitroanisole (DNAN) microbial biotransformation and their inhibitory impact to microorganisms. Environmental Chemistry Division. 250th American Chemical Society National Meeting. Boston, MA. Aug. 16, 2015.
21. Sierra-Alvarez, R., Westerhoff, P., **Olivares, C.I.***, Bi, X., Field, J.A., Simonich, M., Tanguay, R. Toxicity testing on chemical mechanical planarization nanoparticles and III-V ions using the

zebrafish embryonic model. 2015 Annual Review Meeting of the Semiconductor Research Corporation Engineering Research Center. Tucson, AZ. April 1-2, 2014.

22. **Olivares, C.I.***, Khatiwada, R., Sierra-Alvarez, R., Abrell, L., Chorover, J., Field, J. A. Biotransformation of 2,4-dinitroanisole (DNAN) in soils. CH2MHILL Chemistry conference call. Oct. 23, 2014. (webinar)
23. **Olivares, C.I.***, Abrell, L., Chorover, J., Sierra-Alvarez, R., Field, J. A. *In vivo* ecotoxicity of 2,4-dinitroanisole (DNAN) biotransformation products using zebrafish (*Danio rerio*) embryos. Graduate Research Symposium. Chemical and Environmental Engineering. University of Arizona. Sept. 25, 2014. (1st place)
24. **Olivares, C.I.***, Abrell, L., Sierra-Alvarez, R., Field, J. A. Coupling fate and toxicity: Biotransformation and microbial toxicity of 2,4-dinitroanisole (DNAN) in anaerobic conditions. Earth Week 2014. University of Arizona. April 10, 2014. (1st place)
25. **Olivares, C.I.*** Rabelais microbiologiste et l'astrobiologie de Voltaire: Ou la littérature comme force motrice des découvertes scientifiques. Carolina Conference on Romance Literatures. University of North Carolina - Chapel Hill. April 3-5, 2014.
26. **Olivares, C.I.***, Liang, J., Abrell, L., Sierra-Alvarez, R., Field, J.A. Bomb-eating microbes: Reductive biotransformation of 2,4-dinitroanisole and microbial toxicity. Soil, Water, and Environmental Science Student Plenary talk. Earth Week 2013. University of Arizona. April 12, 2013.
27. **Olivares, C.I.***, Sierra-Alvarez, R., Abrell, L., Field, J. A. Biotransformation and microbial toxicity of 2,4-dinitroanisole. Grad Blitz. Institute of the Environment. University of Arizona. Nov. 9, 2012.
28. **Olivares, C.I.***, Alday, F., Sáez, A. E., Ela, W. P. Iron morphological changes in landfills and arsenic leaching. Arizona Water Conference 2011. May 4-6, 2011.

RESEARCH POSTERS (* presenter)

1. Cook, E.K., Sun, Y., **Olivares, C.I.***, Yi, S., Sedlak, D.L., Alvarez-Cohen, L. In situ remediation of aqueous film forming foams and common co-contaminants with the dual approach of chemical oxidation and bioremediation. SERDP and ESTCP Symposium & Workshop, Washington D.C., Nov 3-5, 2019.
2. Cook, E.K., Sun, Y., **Olivares, C.I.***, Yi, S., Sedlak, D.L., Alvarez-Cohen, L. Optimization of persulfate in situ chemical oxidation (ISCO) for poly- and perfluoroalkyl substances (PFAS) treatment in groundwater and aquifer solids at a PFAS-impacted site in Jacksonville, Florida. SERDP and ESTCP Symposium & Workshop, Washington D.C., Nov 3-5, 2019.
3. **Olivares, C.I.***, Cook, E.K., Sun, Y., Yi, S., Sedlak, D.L., Alvarez-Cohen, L. Combined persulfate chemical oxidation and bioremediation as in-situ remediation strategies for AFFF components and co-contaminants. 2018 Gordon Research Conference on Environmental Sciences: Water, Holderness, NH. June 24-29, 2018.
4. Cook, E.K., Sun, Y., **Olivares, C.I.**, Yi, S. *, Sedlak, D.L., Alvarez-Cohen, L. In situ remediation of aqueous film forming foams and common co-contaminants with the dual approach of chemical oxidation and bioremediation. SERDP and ESTCP Symposium & Workshop, Washington D.C., Nov 28-30, 2017.
5. **Olivares, C.I.***, Sierra-Alvarez, R., Abrell, L., Chorover, J., Field, J.A. Biotransformation and microbial toxicity of 2,4-dinitroanisole (DNAN). Association of Environmental Engineering & Science Professors 2015 Conference, Yale, CT. June 13-16, 2015.

6. **Olivares, C.I.***, Sierra-Alvarez, R., Abrell, L., Chorover, J., Field, J.A. Biotransformation and Microbial Toxicity of 2,4-Dinitroanisole (DNAN). Society of Environmental Toxicology and Chemistry North America 35TH Annual Meeting, Vancouver, B.C., Canada. Nov. 9-13, 2014.
7. Sierra-Alvarez, R., Westerhoff, P., **Olivares, C.I.***, Bi, X., Field, J.A., Simonich, M., Tanguay, R. Toxicity testing on chemical mechanical planarization nanoparticles and III-V ions using the zebrafish embryonic model. 2015 Annual Review Meeting of the Semiconductor Research Corporation Engineering Research Center. Tucson, AZ. April 1-2, 2014.
8. **Olivares, C.I.**, Sierra-Alvarez, R., Abrell, L.*, Field, J. A. Biotransformation and microbial toxicity of 2,4-dinitroanisole. Arizona Mass Spectrometry Discussion Group. March 17, 2014.
9. **Olivares, C.I.***, Sierra-Alvarez, R., Abrell, L., Field, J. A. Biotransformation and microbial toxicity of 2,4-dinitroanisole. Grad Blitz. Institute of the Environment. University of Arizona. Nov. 7, 2013.
10. **Olivares, C.I.***, Sierra-Alvarez, R., Abrell, L., Field, J. A. Biotransformation and microbial toxicity of 2,4-dinitroanisole. Superfund Annual Meeting 2014. Louisiana State University. Oct. 15-17, 2013.
11. **Olivares, C.I.***, Alday, F., Sáez, A. E., Ela, W. P. Arsenic adsorption onto vivianite and co-precipitation. Graduate Professional Student Council Showcase Oct. 22-23, 2010.

SCIENCE COMMUNICATION

Six Classes of Hazardous Chemicals video translations into Spanish. Green Science Policy Institute. 2019

Charbonnet, J., Miller, S., **Olivares, C.I.** The Engineers and COVID. Episode 501. Water You Taking About Podcast. 2020

<https://soundcloud.com/water-podcast/episode-501-the-engineers-and-covid>

Olivares, C.I., Charbonnet, J. Lo que el agua me dio (Mexico City's complicate history with water. Episode in Spanish). Episode 306. Water You Taking About Podcast. 2018

<https://soundcloud.com/water-podcast/episode-402-lo-que-el-agua-me-dio>

Olivares, C.I., Charbonnet, J. The sewers of Paris. Episode 306. Water You Taking About Podcast. 2018

<https://soundcloud.com/water-podcast/episode-306-the-sewers-of-paris>

Translation into Spanish of Biogeochemistry and Environmental Quality Fact Sheets. Clemson University. 2017, 2018. <http://achow.people.clemson.edu/public-outreach.html>

Olivares, C.I., Water is blue, wastewater is green. 2014

<http://greeningresearch.com/quest-post-water-is-blue-wastewater-is-green/>

Olivares, C.I., From caverns to your gut, bacteria wield an influence. 2012

http://swes.cals.arizona.edu/environmental_writing/stories/fall2012/olivares.html 2012

McLemore, M., Field, J.A., **Olivares, C.I.** Arizona Illustrated PBS TV broadcast, May 9th, 2012. Are bugs the key to an eco-friendly way to clean up the dangerous chemicals left behind by spent munitions and explosives? <http://playpbs.azpm.org/video/2232723119> (18:35 min)

TEACHING AND MENTORING EXPERIENCE

CE 211B. Environmental Biological Processes, University of California, Berkeley *Fall 2019, 2020*
Instructor of record for graduate level core Environmental Engineering course.

Research Mentor, U of Arizona, Clemson U, University of California, Berkeley *Sp. 2013 to present*
Mentored 4 undergraduate students, 5 MS students, and 11 PhD students engaged in independent

research projects, taught analytical techniques and experimental design, advised students in writing prospectus and theses for publication, participated in mock qualifying exams.

Introduction to Hazardous Waste Management, University of Arizona *Sp. 2015*

Teaching assistant for undergraduate-graduate course on hazardous waste.

Enzyme Kinetics Laboratory Module, University of Arizona *Fall 2012 - 2015*

Teaching and laboratory assistant for the Enzyme Kinetics module for the Environmental Engineering graduate-level laboratory course.

Advanced Water Treatment, University of Arizona *Fall 2013*

Preceptor for graduate-level remediation design course of a Superfund site.

Microbiology for Engineers, University of Arizona *Fall 2014*

Guest lecturer for a 50+ undergraduate student course on extremophile bacteria and biological redox reactions.

Logistics of Writing Scientific Manuscripts, University of Arizona *Fall 2014, Sp. 2015*

Guest lecturer for honors undergraduate and graduate courses on writing scientific manuscripts.

SERVICE ACTIVITIES

Ad hoc reviewer

Environmental Science & Technology, Environmental Science: Processes and Impacts, Environmental Engineering Science, Journal of Hazardous Materials, Biodegradation, PLoS ONE, Environmental Science and Pollution Research, American Chemical Society (ACS) Books).

2019 American Chemical Society Spring Meeting, Orlando FL *April 2019*

Co-chaired day and a half session on "Per- & Polyfluoroalkyl Substances in the Environment: From Legacy To Emerging Contaminants"

Expanding Your Horizons *March 2019*

Helped lead hands-on environmental engineering water filtration in conference that introduces careers in STEM to 5th to 8th grade girls.

Bay Area Scientists in Schools *Aug. 2018- present*

Helped lead hands-on environmental engineering water filtration activities with elementary school children in Oakland, CA

(Un)Tapped Potential: The Future of the University and Entrepreneurship *April 2018*

Volunteered in Panel to promote inclusive and transdisciplinary entrepreneurship at UC Berkeley.

CITRIS Foundry Science Fellows Co-Chair *Jan.-May 2018*

Helped connect postdoctoral scholars with startup companies in at the deep technology startup accelerator program.

Discovery Nights Biosphere 2 *Oct. 2014*

Volunteered at science outreach events organized by University of Arizona and Biosphere 2.

Mining Educational Modules *Jan. 2014 to May 2014*

Developed and piloted educational modules on mining environmental impacts with the University of Arizona Superfund Center and the Tohono O'odham Community College.

Superfund Annual Meeting 2013, Louisiana State University *Oct. 2013*

Co-chaired session on 'Emerging contaminant and pollutant mixtures'.

UA Superfund Booth at Festival of Books *March 2013*

Engaged with children and adults on environmental topics and pollution prevention.

Superfund Student, Professional, and Alumni Network (SPAN) *Oct. 2012 to May 2014*

Participated as University of Arizona representative in teleconferences to organize student events in the 2013 Superfund Annual Meeting.

Hazardous Household Waste Program *Feb. 2012 to Nov. 2012*
Volunteered for the HHW program organized by the City of Tucson, AZ.

AZ Water for People – Tour de Tucson *Nov. 2013*
Fundraised for Water for People and participated in the 107 mile cycling event.

PROFESSIONAL TRAINING COURSES

2019 NextProf Nexus. Preparing the Next Generation of Scientific and Technological Leaders. Atlanta, Georgia. October 2-5, 2019.

2018 NSF workshop "I ran my metabolomics - now what?" NIEHS West Coast Metabolomics Center, University of California, Davis. Davis, CA. June 11-13, 2018

Developing and Applying Adverse Outcome Pathways (AOP) – What You Need to Know (pt. I and II). Society of Environmental Toxicology and Chemistry (SETAC) 36TH Annual Meeting. Salt Lake City, UT. Nov. 1-5, 2015.

OTHER AWARDS

- Society of Environmental Toxicology and Chemistry Student Travel Award, 2015
- University of Arizona Institute of the Environment. Fall Travel Grant, 2015
- University of Arizona Graduate Professional Student Council Travel Grant, 2014
- Southern Arizona Environmental Management Society Scholarship, 2014

LANGUAGES

Fluent in English and French. Native Spanish speaker.