

Chloe Fender, Ph.D.

SCIENTIST III

CONTACT INFORMATION

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PROFESSIONAL PROFILE

Dr. Chloe Fender is an ecotoxicologist in ToxStrategies' Exposure Sciences practice who is passionate about supporting ecosystem and community health. She specializes in assessing emerging contaminants in aquatic systems and interpreting their impact on environmental health.

Dr. Fender's projects have involved developing and implementing mass spectrometry-based nontarget analysis and suspect screening to determine and prioritize emerging contaminants in surface water, including in irrigation canals and rivers. Dr. Fender has conducted nontarget mass spectrometry-based metabolomics for many studies, including on salmon tissues to elucidate the toxicity mechanisms of 6PPD-quinone, a toxic chemical byproduct formed from the 6PPD compound commonly added to tire rubber to prevent degradation. Proficient with *in vivo* and *in vitro* toxicological approaches, Dr. Fender has also conducted effects-directed analysis studies and performed acute toxicity experiments.

Dr. Fender's laboratory and sampling skills include field sampling and field operations management, stakeholder collaboration, SOP development, extraction techniques, liquid-chromatography, and mass spectrometry. She also has experience with data management, multivariate analysis, data visualization, R studio, and ArcGIS.

Before joining ToxStrategies, Dr. Fender served as a consultant to Salmon-Safe in Portland, OR. There she evaluated ecological risk assessments of pesticides to determine hazard based on persistence, mobility, and aquatic toxicity, and provided technical review of agricultural pesticides, with a focus on their impacts on salmonids, other aquatic life, and terrestrial insects. She also managed several projects at Oregon State University, including designing and conducting field studies and developing protocols and methods for water quality and ecotoxicity experiments using hydrological techniques, multivariate data analysis, and tissue dissection.

EDUCATION AND DEGREES EARNED

2024	Ph.D., Toxicology, Oregon State University, Corvallis, OR
2022	M.S., Toxicology, Oregon State University, Corvallis, OR
2019	B.S., Biology (<i>Summa cum Laude</i>), Westminster University, Salt Lake City, UT

PROFESSIONAL ASSOCIATIONS

2023-Present	Society of Toxicology
2023-Present	Pacific Northwest Association of Toxicology (PANWAT)
2021-Present	Metabolomics Association of North America
2020-Present	Pacific Northwest Society of Environmental Toxicology and Chemistry (PNW-SETAC)
2018–Present	Society of Environmental Toxicology and Chemistry (SETAC)

HONORS/AWARDS

2024	PANWAT Dr. William Baird Travel Award
2024	Professional Development Award, Oregon State Graduate School
2023	First Place Poster Award, PANWAT Conference
2023	Best Communication Poster Award, Research Day Symposium
2021-2023	NIEHS T32 National Research Service Award (NRSA) Predoctoral Fellow
2022-2023	Oregon Lottery Scholarship Award
2020	Professional Development Award, Oregon State Graduate School
2019	Westminster Biology Department Student of the Year
2019	FRIENDS of Great Salt Lake Doyle Stephens grant recipient
2019	Gore Family Math and Science Undergraduate Research Award
2018	Great Salt Lake Institute Undergraduate Research Award

CERTIFICATIONS

2023	CPR/AED/First Aid, American Red Cross Training Services
2023	American Canoe Association Swiftwater Rescue
2022	Motorboat Operator Training Course

PROFESSIONAL SERVICE

2024-Present	2025 Planning Committee, North American Annual Conference, SETAC
2023-Present	Board Vice President, Northwest Center for Alternative to Pesticides

2021-Present Fundraising Committee Chair, Northwest Center for Alternative to Pesticides
 2023-2024 President, Trainees in Environmental and Molecular Toxicology, Oregon State University
 2022-2023 Pacific Northwest Student-at-Large Representative, SETAC

PEER-REVIEWED PUBLICATIONS

Bright PW, Jackson ME, **Fender CL**, Lee K, Haggerty C, Schindler J, Truong L, Tanguay RL, Garcia-Jaramillo M. 2026. Integrated chemical and toxicity screening of tap drinking water across Western Oregon using suspect and nontarget screening. *Environ Sci Technol* 60(25):17706-17717; doi: [10.1021/acs.est.6c01661](https://doi.org/10.1021/acs.est.6c01661). PMID: 42304736.

Fender CL, Morshead M, Schindler J, Williamson M, Brown K, Cohen C, Feldman L, et al. 2026. Addressing community concerns about unregulated organic contaminants in surface water: Integrating suspect and non-targeted chemical analyses with Zebrafish toxicity testing and computational hazard comparisons. *Environ Pollut* 399(15 June):128103; doi: [10.1016/j.envpol.2026.128103](https://doi.org/10.1016/j.envpol.2026.128103). PMID: 41997357.

Jackson M, **Fender CL** (co-first authors), Harper S, Garcia-Jaramillo M. 2026. Metabolic disruption in salmonids following co-exposure to road runoff contaminants 6PPD-Quinone and 9,10-anthraquinone. *Sci Total Environ* 1011(Jan 10):181172; doi: [10.1016/j.scitotenv.2025.181172](https://doi.org/10.1016/j.scitotenv.2025.181172). PMID: 41389783.

Nguyen HVM, Hu F, Shakya E, **Fender C**, Lee K, Schindler J, Garcia-Jaramillo M, Ahsan N, et al. 2026. Mitochondrial-haplotype influences plasma metabolome, lipidome, and proteome in a sex specific manner in the genetically heterogenous OKC-HET^{BW} rat. *FASEB J* 40(10):e71736; doi: [10.1096/fj.202502189RRR](https://doi.org/10.1096/fj.202502189RRR). PMID: 42171346.

Nguyen HVM, Cabello E, Dyer D, **Fender C**, Garcia-Jaramillo M, Hord NG, Austad S, Richardson A, Unnikrishnan A. 2025. Age, sex, and mitochondrial-haplotype influence gut microbiome composition and metabolites in a genetically diverse rat. *Aging* 17(2):524-549; doi: [10.18632/aging.206211](https://doi.org/10.18632/aging.206211). PMID: 40015964.

Olland M, Hernandez A, Droz B, **Fender CL**, La Joie A, Garcia-Jaramillo M, Navab-Daneshmand T, Jones GD. 2025. Microbial communities shape chemical fate during wastewater treatment: Implications for low-cost treatment optimization. *ACS ES&T Water* 5(12):7231-7240; doi: [10.1021/acsestwater.5.c0060](https://doi.org/10.1021/acsestwater.5.c0060).

Fender CL, Good SP, Garcia-Jaramillo. 2024. An integrated approach to evaluating water contaminants and evaporation in agricultural water distribution systems. *Ecotoxicol Environ Safety* 287(15 Nov):117277; doi: [10.1016/j.ecoenv.2024.117277](https://doi.org/10.1016/j.ecoenv.2024.117277). PMID: 39515202.

Mayer PM, Moran KD, Miller EL, Brander SM, Harper S, Garcia-Jaramillo M, Carrasco-Navarro KT,...**Fender CL**. 2024. Where the rubber meets the road: Emerging environmental impacts of tire wear particles and their chemical cocktails. *Sci Total Environ* 927(June 1):171153; doi: [10.1016/j.scitotenv.2024.171153](https://doi.org/10.1016/j.scitotenv.2024.171153). PMID: 38460683.

REPORTS AND BOOK CHAPTERS

Forsyth L, Pitts H, Whidden I, Porta L, Lawson L, Heinitz R, **Fender CL**, et al. 2023. [Youth Vision for the Columbia River Report: Report on the Youth Call for Action in the Basin](#). North American Youth Parliament for Water.

Kimberly DA, **Fender CL**. 2020. Amphibians and reptiles of Antelope Island, Great Salt Lake, Utah. In: Baxter BK and Butler JK (eds), *Great Salt Lake Biology: A Terminal Lake in a Time of Change*. Springer Nature Switzerland AG, ISBN: [978-3-030-40352-2](https://doi.org/10.1007/978-3-030-40352-2), pp. 345-367.

PRESENTATIONS AND ABSTRACTS

Kennedy SB, Heintz MM, Brown L, **Fender CL**, Hecker M, Hughes SA, Naile J, DeLeo P. Defining the domain of applicability: A case study to increase confidence in toxicogenomic tools for ecological risk assessment. Poster 1.03.P-Tu032, SETAC Europe 36th Annual Meeting, Maastricht, The Netherlands, May 19, 2026.

Bare J, **Fender CL**, Torres C, Panko J. Assessing environmental monitoring data quality and reliability in TSCA risk evaluations using 4-tert-octylphenol as a case study. Abstract 7.05.P-Mo-116, Society of Environmental Toxicology and Chemistry (SETAC) North America 46th Annual Meeting, Portland, OR, November 2025.

Fender CL, Garcia-Jaramillo M, Jackson ME, Truong L, Tanguay RL, Schindler J, Lee K, Bright PW. Start to finish: Discovery, quantification and toxicity assessment of emerging contaminants in tap drinking water using mixed and new approach methods. Abstract 4.16.T-02, SETAC North America 46th Annual Meeting, Portland, OR, November 2025.

Fender CL, Morshead ML, Truong L, Cohen C, Feldman L, Rothman D, Tanguay RL, Garcia-Jaramillo M. Science communication and community partnership in suspect and nontarget environmental monitoring study. Abstract 4.16.P-Mo-043, SETAC North America 46th Annual Meeting, Portland, OR, November 2025.

Heintz MM, Kennedy SB, Brown L, **Fender CL**, Hecker M, Hughes SA, Naile J, DeLeo P. Toxicogenomics in ecological risk assessment: Current landscape, research gaps and recommendations to increase confidence across sectors. Abstract 1.02.T-01, SETAC North America 46th Annual Meeting, Portland, OR, November 2025.

Jackson ME, **Fender CL**, Harper SL, Garcia-Jaramillo M. Leveraging multi-omics analyses to explore the toxicity of urban road runoff contaminants in salmonid species. Abstract 4.12.B.T-04, SETAC North America 46th Annual Meeting, Portland, OR, November 2025.

Nguyen HVM, **Fender C**, Garcia-Jaramillo M, Nagib A, Hord N, Austad S, Richardson A, Stout M. Mitochondrial DNA affects metabolome, lipidome, and proteome in a sex specific manner in old heterogenous rats. Abstract igaf122.1926, Gerontological Society of America (GSA) 2025 Annual Scientific Meeting: Innovative Horizons in Gerontology. Innov Aging 9(Supp 2); doi: [10.1093/geroni/igaf122.1926](https://doi.org/10.1093/geroni/igaf122.1926). Boston, MA, November 2025.

Fender CL, Jackson M, Harper S, Jaramillo-Garcia M. Exploring the effects of toxic road runoff contaminants on juvenile salmonids with LC-MS/MS based metabolomics. Platform presentation at Society of Toxicology 63rd Annual Meeting, Salt Lake City, UT, March 2024.

Fender CL, Morshead M, Cohen C, Truong L, Rohlman D, Tanguay R, Jaramillo-Garcia M. Using suspect and nontarget LC-HRMS and high throughput toxicity assays to identify and prioritize surface water contaminants. Poster presentation at PNW SETAC Annual Conference, Troutdale, OR, 2024.

Jackson ME, **Fender CL**, Harper SL. Leveraging multi-omics analyses to explore the toxicity of urban road runoff contaminants in juvenile salmonid species. Abstract 2.10.P-We-084, SETAC North America 45th Annual Meeting, Ft. Worth, TX, October 2024.

Fender CL, Morshead M, Cohen C, Truong L, Rohlman D, Tanguay R, Jaramillo-Garcia M. Suspects and nontarget chemical analyses to address community concerns related to chemicals and toxicity in the Portland harbor. Poster presentation at SRP Annual Conference, Albuquerque, NM, 2023.

Fender CL, Morshead M, Cohen C, Truong L, Rohlman D, Tanguay R, Jaramillo-Garcia M. Using suspect and nontarget LC-HRMS and high throughput toxicity assays to identify and prioritize surface water contaminants. Poster presentation at PANWAT Annual Conference, Portland, OR, 2023.

Fender CL, Morshead M, Cohen C, Truong L, Rohlman D, Tanguay R, Jaramillo-Garcia M. Using suspect and nontarget LC-HRMS and high throughput toxicity assays to identify and prioritize surface water contaminants. Oral presentation at Pacific Northwest (PNW) SETAC Annual Conference, Troutdale, OR, 2023.

Fender CL, Morshead M, Cohen C, Truong L, Rohlman D, Tanguay R, Jaramillo-Garcia M. Water contaminants in the Portland Harbor: Addressing community concerns related to chemicals and toxicity. Seminar presentation at Environmental and Molecular Toxicology Seminar Series, Corvallis, OR, 2023.

Fender CL, Morshead M, Cohen C, Truong L, Rohlman D, Tanguay R, Jaramillo-Garcia M. Identification and evaluation of contaminant mixtures in surface water using EDA coupled to LC-HRMS. Poster presentation at Environmental and Molecular Toxicology Research Day, Corvallis, OR, 2022.

Fender CL, Honneffer J, Morshead M, Bionaz M, Ates S, Durringer J, Garcia-Jaramillo M. Targeted and non-targeted high-resolution LCMS lipidomics analysis of adipose tissue from lambs fed with spent hemp biomass. Poster presentation at Metabolomics Association of North America, Edmonton, Alberta, Canada, 2022.

Fender CL, Good S, Jaramillo-Garcia M. Using nontarget LCMS and in silico toxicological approaches for the detection and prioritization of contaminant mixtures in a regional irrigation canal. Poster presentation at SETAC Nontarget Special Topics Session, Durham, NC, 2022.

Fender CL, Good S, Jaramillo-Garcia M. Assessing surface water chemical trends in natural and human-made systems and potential toxic effects of prioritized contaminants. Seminar presentation at Environmental and Molecular Toxicology Series, Corvallis, OR, 2022.

Fender CL, Good S, Jaramillo-Garcia M. Exploring the impacts of evaporation on chemical trends in a regional river and irrigation canal, using nontarget LCMS approaches. Poster presentation at Pacific Northwest Water Symposium, Corvallis, OR, 2022.

Fender CL, Kimberly D. Contaminant pulses associated with snowmelt in Northern Utah, USA. Poster presentation at Salt Lake County Water Symposium, Salt Lake City, UT, 2019.

Fender CL, Kimberly D. Contaminant pulses associated with snowmelt in Northern Utah, USA. Poster presentation at SETAC North America Conference, Toronto, Ontario, Canada, 2019.

Fender CL, Kimberly D. Contaminant pulses associated with snowmelt in Northern Utah, USA. Oral presentation at Westminster Summer Undergraduate Research Fair, Salt Lake City, UT, 2019.

Fender CL, Kimberly D. Effects of urbanization on water quality and instream biota in Utah, USA. Poster presentation at Westminster Undergraduate Research Fair, Salt Lake City, UT, 2019.

Fender CL, Kimberly D. Effects of urbanization on water quality and instream biota in Utah, USA. Oral presentation at Utah Conference of Undergraduate Research, Cedar City, UT, 2018.

Fender CL, Kimberly D. Effects of urbanization on water quality and instream biota in Utah, USA. Poster presentation at Salt Lake County Water Symposium, Salt Lake City, UT, 2018.

Fender CL, Kimberly D. Effects of urbanization on water quality and instream biota in Utah, USA. Oral presentation at Westminster Summer Undergraduate Research Fair, Salt Lake City, UT, 2018.

Fender CL, Calhoun E, Baxter B. Rates of inclusion of female researchers at Great Salt Lake. Poster presentation at Great Salt Lakes Issues Forum, Salt Lake City, UT, 2018.