

CARSTEN PRASSE, PH.D.

Department of Environmental Health and Engineering

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MAIN RESEARCH INTERESTS

- Detection and occurrence of previously unknown organic contaminants in the environment
- Fate and transformation of trace organic contaminants in the urban water cycle and the environment
- Elucidation of transformation products of trace organic contaminants formed in the natural and built environment
- Biological effects of trace organic contaminants and their transformation products at the molecular level
- Development of new methods to elucidate the exposure to toxic chemicals via different pathways and different exposure media.

RESEARCH EXPERIENCE

UPS Visiting Professor Stanford University, Palo Alto

Department of Civil and Environmental Engineering

School of Engineering & Doerr School of Sustainability

08/2026 – 07/2027

Associate Professor Johns Hopkins University, Baltimore

(with tenure)

Department of Environmental Health & Engineering

Whiting School of Engineering and Bloomberg School of Public Health

01/2025 – present

Assistant Professor Johns Hopkins University, Baltimore

Department of Environmental Health & Engineering

Whiting School of Engineering and Bloomberg School of Public Health

02/2018 – 12/2024

Postdoc University of California, Berkeley

Department of Civil & Environmental Engineering

Advisor: Prof. David Sedlak; 02/2015 – 02/2018

Postdoc Federal Institute of Hydrology, Koblenz, Germany

Department of Aquatic Chemistry

Advisor: Prof. Thomas Ternes; 06/2012 – 01/2015

Visiting Scholar **University of California, Berkeley**
Department of Civil & Environmental Engineering
Advisor: Prof. David Sedlak; 05/2013 – 11/2013

EDUCATION

Ph.D. in Chemistry **Federal Institute of Hydrology (BfG), Koblenz & University of Koblenz-Landau, Germany**
Supervisor: Prof. Thomas Ternes, 05/2012

Antiviral drugs in the aquatic environment: Analysis, occurrence and fate

Dr. rer nat. (equivalent to Ph.D.), Grade: *Summa cum laude*

Diploma in Geoecology **University Bayreuth, Germany**
Department of Soil Sciences, Supervisor: Prof. Dr. W. Zech, 04/2008

Contamination of urban soils in Addis Ababa, Ethiopia

HONORS & AWARDS

- Dissertation Award of the German Water Chemistry Society (2013)
- DAAD Postdoctoral Fellowship (05/2013 – 11/2013)
- ACS Certificate of Merit, 250th ACS National Conference (2015)
- SETAC New Chemist Travel Award (2018)
- ES&T Excellence in Review Award (2021)
- NIEHS Extramural Paper of the month (December 2021)
- NSF CAREER Development Award (2022)
- ES&T Letters Excellence in Review Award (2022)
- ES&T Excellence in Review Award (2022)
- ES&T Super Reviewer Award (2023)
- ACS Environmental Au Rising Star in Environmental Research (2024)
- ES&T Super Reviewer Award (2024)
- RSC Environmental Science: Processes & Impacts Emerging Investigator (2025)
- RSC Outstanding Reviewer for Environmental Science: Processes & Impacts (2025)
- National Academy of Sciences Frontiers of Science Fellow (2026)
- National Academy of Sciences Discovery as a Human Endeavor Cohort Member (2026)

RESEARCH

PUBLICATIONS

* Student/Postdoc in my research group, ** Corresponding author

Peer-reviewed publications

2026

Zhang, Z. *, Grace, D.N. *, Vu, N.P., Nguyen, L.A., Hendrickson, H.P. **, **Prasse, C.** ** Mechanistic insights into (toxic) carbonyl compound formation during ozonation of substituted phenols. *Water Research*, 125916. (<https://doi.org/10.1016/j.watres.2026.125916>)

Demo, R.J.L., **Prasse, C.**, Nachman, K.E., Lupolt, S.N. Mixed-methods characterization of the tasks and factors influencing occupational exposure during biosolids land application. *Journal Of Exposure Science and Environmental Epidemiology*, 36, 796–806 (<https://doi.org/10.1038/s41370-026-00870-x>).

Sanchez, D.A.H. *, **Prasse, C.** ** Accumulation and Metabolism of Wastewater-Derived Psychoactive Pharmaceuticals in Edible Crop Plants. *Environmental Science & Technology*, 60 (11), 8722–8733. (<https://doi.org/10.1021/acs.est.5c14903>).

Burgener, K. *, **Prasse, C.** ** Magic Mushrooms? White-Rot Fungal Degradation of Psychoactive Pharmaceuticals in Biosolids. *ACS Environmental Au*, 6 (2), 346–357 (<https://pubs.acs.org/doi/10.1021/acsenvironau.5c00258>).

Sillé, F.C.M., Kopańska, K., **Prasse, C.**, Luechtefeld, T., Hartung, T. AI redefines quantitative metabolomics: Estimating chemical amounts for a Human Exposome Project. *Frontiers in Public Health*, 14, 1775284 (<https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2026.1775284>).

2025

Sillé, F.C.M., **Prasse, C.**, Luechtefeld, T., Hartung, T. AI Redefines Mass Spectrometry Chemicals Identification: Retention Time Prediction in Metabolomics and for a Human Exposome Project. *Frontiers in Public Health* 13:1687056 (<https://doi.org/10.3389/fpubh.2025.1687056>).

Anastasia, C.M. * Phillips, S.G., Kralles, Z.T. *, Lee, C.B., Buurma, E.E., **Prasse, C.** **, Fairbrother, D.H. ** Unexpected reactivity of commercially relevant phthalates with free chlorine. *ACS ES&T Water* 5 (11), 6842–6852 (<https://doi.org/10.1021/acsestwater.5c00783>).

Kralles, Z.T. *, **Prasse, C.** **. Beyond 1–2 Carbon Compounds: Emerging Insights on Higher-Carbon Disinfection Byproducts. *Current Opinion in Environmental Science & Health* 48, 100676 (<https://doi.org/10.1016/j.coesh.2025.100676>).

Newmeyer, M.N. *, Hey, M.-L. *, Love, D.C., Lupolt, S.N., Kleven, M., Roach, S., **Prasse, C.** **, Nachman, K. **. Application of a novel method for measuring carbadox residues in retail pork. *Journal of Agricultural and Food Chemistry*, 73 (39), 25057–25064 (<https://pubs.acs.org/doi/10.1021/acs.jafc.5c08314>).

Kavi, L.K., Newmeyer, M.N., Pool, W., Louis, L.M., Rule, A.M., **Prasse, C.**, Quirós-Alcalá, L. Characterization of Select Salon Chemical Exposures among Black and Latina U.S. Hairdressers Serving Women of Color. *Journal of Environmental Exposure Assessment*, 4 (37) (<https://www.oaepublish.com/articles/jeea.2025.47>).

Grace, D. *, Rorie, A. *, **Prasse, C. **** In chemico toxicity approaches to assess, identify, and prioritize contaminants in water. *Nature Water*. 3, 854–866 (<https://www.nature.com/articles/s44221-025-00468-x>).

Smith, C. *, Fairbrother, D.H., **Prasse, C. **** Emerging Investigator Series: Release and Photo-transformation of Benzophenone Additives from Polystyrene Plastics Exposed to Sunlight. *Environmental Science: Processes and Impacts*, 27, 2673–2684 (*invited submission for Emerging Investigator series*; <https://doi.org/10.1039/D5EM00292C>).

Newmeyer, M.N. *, Lupolt, S.N., Lyu, Q., Nachman, K.E., **Prasse, C. **** Applying nontargeted analysis to explore the chemical composition of dust collected in infants' homes. *Environmental Science & Technology*. 59 (21), 10567–10577 (<https://doi.org/10.1021/acs.est.5c04164>).

Zhang, Z. *, Reber, K.P., Okwor, N., Gujarati, P.D., Vollmuth, M., Zhang, L. *, McCurry, D.L., Sivey, J.D., **Prasse, C. ****. Stable isotope labelling to elucidate ring cleavage mechanisms of disinfection by-product formation during chlorination of phenols. *Nature Water*, 3, 222–230 (<https://doi.org/10.1038/s44221-024-00381-9>).

Sigmon, L.R., Catazaro, J., Abdel-Rahman, M., Smith, C. *, **Prasse, C.**, Fairbrother, D. H. ** Interrogating the photoluminescent properties of carbon dots using quantitative ¹³C NMR combined with systematic photobleaching. *Carbon*, 2025, 232, 119796 (<https://doi.org/10.1016/j.carbon.2024.119796>).

2024

Grace, D. *, Newmeyer, M.N. *, **Prasse, C. **** Solid-phase reactivity-directed extraction (SPREx): a novel approach for simultaneous extraction, identification, and toxicity assessment of electrophiles produced in water treatment applications. *ACS Environmental Au* 4 (6), 317–332 (*invited submission for Rising Stars in Environmental Research Series*; <https://pubs.acs.org/doi/10.1021/acsenvironau.4c00025>).

Hamdan, N. *, Villaruel, C., Newmeyer, M.N. *, Wallace, V. *, Spear, J., Ranville, J.F. **, **Prasse, C. **** Assessing the Impact of Recreational Activities on Stream Water Chemistry: A Colorado Case Study. *ACS ES&T Water*. 4, 9, 4028–4040 (<https://doi.org/10.1021/acsestwater.4c00327>).

Li, J., **Prasse, C.**, Zhang, Z. *, Chen, C., Zheng, S., Dong, Z., Fang, J. ** New Insights into the Effects of Borate on the Formation of cis-2-butene-1,4-dial and Chlorinated DBPs during Chlorination of Phenol. *Chemical Engineering Journal*. 495, 153701. <https://doi.org/10.1016/j.cej.2024.153701>

Oppenheimer, J.A. **, **Prasse, C.**, Newmeyer, M.N. *, Schwab, K.J., Jacangelo J.G. Site demonstrations of conditions for utilization of iohexol and iohexol degradates monitoring as evidence of reclaimed water irrigation overspray resulting in runoff or infiltration. *Science of the total Environment*. 946, 174351. <https://doi.org/10.1016/j.scitotenv.2024.174351>.

Newmeyer, M.N. *, Lyu, Q., Kruse, P., Ring, C., Sobus, J.R., Williams, A.J., Nachman, K.E., **Prasse, C. ****, Combining non-targeted analysis and in-silico tools to support hazard prioritization of unregulated organic contaminants in biosolids. *Environmental Science & Technology*. 58, 27, 12135–12146. <https://doi.org/10.1021/acs.est.4c02934>.

Brueck, C., L. *, Xin, X., Lupolt, S., Kim, B., Santo, R., Lyu, Q., Williams, A., Nachman, K., **Prasse, C. **** Nontargeted chemical analysis and risk assessment of organic contaminants in darkibor kale grown under rural and urban growth conditions. In preparation for submission to *Environmental Science & Technology*. 58, 8, 3690–3701. <https://doi.org/10.1021/acs.est.3c09106>

2023

Abrahamsson, D. **, Brueck, C.L. *, **Prasse, C.**, Lambropoulou, D.A., Koronaiou, L.-A., Wang, M., Park, J.-S., Woodruff, T.J., Extracting structural information from physicochemical property measurements using machine learning - A new approach for structure elucidation in non-targeted analysis. *Environmental Science & Technology*. 57, 14827-14838. <https://doi.org/10.1021/acs.est.3c03003>.

Wallace, V.J. *, Sakowski, E.G., Preheim, S.P., **Prasse, C. **** (2023). Bacteria exposed to antiviral drugs develop antibiotic cross-resistance and unique resistance profiles. *Nature Communications Biology*. 6, 837. <https://doi.org/10.1038/s42003-023-05177-3>.

Manz, K.E. **, Ferrick, A., Braun, J.M., Feng, Y.-L., Hall, A., Koelmel, J., Manzana, C., Newton, S.R., Pennell, K., Place, B.J., Godri Pollitt, K.J., **Prasse, C.**, Young, J.A. (2023) Non-Targeted Analysis (NTA) and Suspect Screening Analysis (SSA): A Review of Examining the Chemical Exposome. *Journal of Exposure Science & Environmental Epidemiology*. 33, 524–536. <https://doi.org/10.1038/s41370-023-00574-6>.

Lupolt S.N., Newmeyer M.N. *, Lyu Q, **Prasse C. ****, Nachman KE. ** (2023). Optimization of a method for collecting infant and toddler urine for non-target analysis using cotton pads and commercially available disposable diapers. *Journal of Exposure Science & Environmental Epidemiology*. 33, 602–609. <https://doi.org/10.1038/s41370-023-00553-x>.

Newmeyer, M.N. *, Quirós-Alcalá, L., Kavi, L.K., Louis, L.M., **Prasse, C. **** (2023). Implementing a suspect screening method to assess occupational chemical exposures among U.S.-based hairdressers serving an ethnically diverse clientele: a pilot study. *Journal of Exposure Science & Environmental Epidemiology*. 33, 566–574. <https://doi.org/10.1038/s41370-023-00519-z>.

Brueck, C. *, Nason, S. *, Multra, M. *, **Prasse, C. **** (2023). Assessing the fate of antibiotics and agrochemicals during anaerobic digestion of animal manure. *Science of the Total Environment*. 856, 159156. <https://doi.org/10.1016/j.scitotenv.2022.159156>

2022

Chow, S.^{*}, Croll, H.C., Ojeda, N., Klamerus, J., Capelle, R., Oppenheimer, J., Jacangelo, J.D., Schwab, K.J.^{**}, **Prasse, C.^{**}** (2022). Comparative investigation of PFAS adsorption onto activated carbon and anion exchange resins during long-term operation of a pilot treatment plant. *Water Research*. 226, 119198. <https://doi.org/10.1016/j.watres.2022.119198>

Zhang, Z.^{*}, **Prasse, C.^{**}** (2022) Chlorination of para-substituted phenols: Formation of α , β -unsaturated C₄-dialdehydes and C₄-dicarboxylic acids. *Journal of Environmental Sciences*. 117, 197-208. <https://doi.org/10.1016/j.jes.2022.04.029>

Prasse, C.^{}**, Yang, X., Chen, C., Xu, B., Li, X.-F. (2022). Re-Imagining drinking water safety based on 21st century science: Microbial pathogens, emerging contaminants, byproducts, and health risks: Preface. *Journal of Environmental Sciences*. 117, 1-2. <https://doi.org/10.1016/j.jes.2022.03.002>

Croll, H.C., Chow, S.^{*}, Ojeda, N., Schwab, K., **Prasse, C.**, Capelle, R., Klamerus, J., Oppenheimer, J., Jacangelo, J.G. (2022). Adaptation of selected models for describing competitive per- and poly-fluoroalkyl substances breakthrough curves in groundwater treated by granular activated carbon. *Journal of Hazardous Materials*. 433, 128804. <https://doi.org/10.1016/j.jhazmat.2022.128804>

Tehrani, M.^{*}, Newmeyer, M.N.^{*}, Rule, A., **Prasse, C.^{**}** (2022). Response to Letter to the Editor Regarding Characterizing the Chemical Landscape in Commercial E-Cigarette Liquids and Aerosols by Liquid Chromatography–High-Resolution Mass Spectrometry. *Chemical Research in Toxicology*. 35(1), 1-2. <https://doi.org/10.1021/acs.chemrestox.1c00414>

2021

Tehrani, M.^{*}, Newmeyer, M.N.^{*}, Rule, A., **Prasse, C.^{**}** (2021). Characterizing the Chemical Landscape in Commercial E-cigarette Liquids and Aerosols by Liquid Chromatography – High-Resolution Mass spectrometry. *Chemical Research in Toxicology*. 34(10), 2216-2226. <https://doi.org/10.1021/acs.chemrestox.1c00253>

Prasse, C.^{}** (2021). Reactivity-directed analysis – a novel approach for the identification of toxic organic electrophiles in drinking water. *Environmental Sciences: Processes & Impacts*. 2021, 23, 48-65. <https://doi.org/10.1039/D0EM00471E>

Ferraro, P.J., **Prasse, C.^{**}** Reimagining Safe Drinking Water based on 21st Century Science. *Nature Sustainability*. 2021, 4, 1032–1037. <https://doi.org/10.1038/s41893-021-00760-0>

Funke, J., **Prasse, C.**, Dietrich, C., Ternes, T.A. (2021). Ozonation products of zidovudine and thymidine in oxidative water treatment. *Water research X*. 11, 100090. <https://doi.org/10.1016/j.wroa.2021.100090>

Jans, U., **Prasse, C.**, von Gunten, U. (2021). Enhanced Treatment of Municipal Wastewater Effluents by Fe-TAML/H₂O₂: Efficiency of Micropollutant Abatement. *Environmental Science & Technology*. 55(5), 3313-3321. <https://doi.org/10.1021/acs.est.0c07662>

Zoumpouli, G.A.^{*}, Zhang, Z.^{*}, Wenk, J., **Prasse, C.^{**}** (2021). Aqueous Ozonation of Furans: Kinetics and Transformation Mechanisms Leading to the Formation of α,β -Unsaturated Dicarbonyl Compounds. *Water Research*. 203, 117487. <https://doi.org/10.1016/j.watres.2021.117487>

2020

Prasse, C.^{**}, von Gunten, U., Sedlak, D.L. (2020). Chlorination of Phenols Revisited: Unexpected Formation of α,β -Unsaturated C4-Dicarbonyl Ring Cleavage Products. *Environmental Science & Technology*. 54(2), 826-834. <https://doi.org/10.1021/acs.est.9b04926>

Sillé, F.C.M., Karakitsios, S., Kleensang, A., Koehler, K., Maertens, A., Miller, G.W., **Prasse, C.**, Quiros-Alcala, L., Ramachandran G., Rappaport, S.M., Rule, A.M., Sarigiannis, D., Smirnova, L. and Hartung, T. (2020). The Exposome – A New Approach for Risk Assessment. *ALTEX*. 37(1), 003-023. <https://doi.org/10.14573/altex.2001051>

Marron, E.L., **Prasse, C.**, Van Buren, J., Sedlak, D.L. (2020). Formation and Fate of Carbonyls in Potable Water Reuse Systems. *Environmental Science & Technology*. 54 (17), 10895-10903. <https://doi.org/10.1021/acs.est.0c02793>

Van Buren, J., **Prasse, C.**, Marron, E.L., Skeel, B., Sedlak, D.L. (2020). Ring-Cleavage Products Produced during the Initial Phase of Oxidative Treatment of Alkyl-Substituted Aromatic Compounds. *Environmental Science & Technology*. 54(13), 8352–8361. <https://doi.org/10.1021/acs.est.0c00432>

Rose, M.R., Lau, S.S., **Prasse, C.**, Sivey, J.D. (2020). Exotic Electrophiles in Chlorinated and Chloraminated Water: When Conventional Kinetic Models and Reaction Pathways Fall Short. *Environmental Science & Technology Letters*. 7, 360–370. <https://doi.org/10.1021/acs.estlett.0c00259>

2019

Scholes, R. C., **Prasse, C.**, Sedlak, D.L. (2019). The Role of Reactive Nitrogen Species in Sensitized Photolysis of Wastewater-Derived Trace Organic Contaminants. *Environmental Science & Technology*. 53(11), 6483-6491. <https://doi.org/10.1021/acs.est.9b01386>

Hedegaard, M.J., **Prasse, C.**, Albrechtsen, H.-F. (2019). Microbial degradation pathways of the herbicide bentazone in filter sand used for drinking water treatment. *Environmental Science: Water Research & Technology*. 5(3), 521-532. <https://doi.org/10.1039/C8EW00790J>

Schneider, I., Abbas, A., Bollmann, A., Funke, J., Oehlmann, J., **Prasse, C.**, Schulte-Oehlmann, U., Seitz, W., Ternes, T., Weber, M. Wesely, H., Wagner, M. (2019). What you extract is what you see: Optimizing the preparation of water and wastewater samples for in vitro bioassays. *Water Research*. 152, 47-60. <https://doi.org/10.1016/j.watres.2018.12.049>

Yang, K., **Prasse, C.**, Greenberg, M.M. (2019). Effect of Histone Lysine Methylation on DNA Lesion Reactivity in Nucleosome Core Particles. *Chemical Research in Toxicology*. 32 (5), 910-916. <https://doi.org/10.1021/acs.chemrestox.9b00049>

2018

Prasse, C., Ford, B, Nomura, D.K., Sedlak, D.L. 2018. Unexpected transformation of dissolved phenols to toxic dicarbonyls by hydroxyl radicals and UV light. *Proceedings of the National Academy of Sciences*. 115 (10), 2311-2316. <https://doi.org/10.1073/pnas.1715821115>

Hedegaard, M.J., Deliniere, H., **Prasse, C.**, Dechesne, A., Smets, B.F., Albrechtsen, H.-F. 2018. Evidence of co-metabolic bentazone transformation by methanotrophic enrichment from a groundwater-fed rapid sand filter. *Water Research*. 129, 105-114. <https://doi.org/10.1016/j.watres.2017.10.073>

Before 2018:

2017

Barazesh, J.M., **Prasse, C.**, Wenk, J., Berg, S., Remucal, C.K., Sedlak, D.L. 2017. Trace Element Removal in Distributed Drinking Water Treatment Systems by Cathodic H₂O₂ Production and UV Photolysis. *Environ. Sci. Technol.* 52 (1), 195–204.

Brezina, E. **Prasse, C.**, Meyer, J., Mückter, H., Ternes, T.A., 2017. Investigation and risk evaluation of occurrence of carbamazepine, oxcarbazepine, their human metabolites and transformation products in the urban water cycle. *Environ. Pollut.* 225, 261-269.

2016

Liu, H., Bruton, T.A., Li, W., Van Buren, J., **Prasse, C.**, Doyle, F.M., Sedlak, D.L., 2016. Oxidation of Benzene by Persulfate in the Presence of Fe(III)- and Mn(IV)-Containing Oxides: Stoichiometric Efficiency and Transformation Products. *Environ. Sci. Technol.* 50 (2), 890–898.

Funke, J., **Prasse, C.**, Ternes, T.A., 2016. Identification and fate of transformation products of antiviral drugs formed during biological wastewater treatment. *Water Res.* 98, 75-83.

Knopp, G., **Prasse, C.**, Ternes, T.A., Cornel, P., 2016. Elimination of micropollutants and transformation products from a wastewater treatment plant effluent through pilot scale ozonation followed by various activated carbon and biological filters. *Water Res.* 100, 580-582.

Barazesh, J., **Prasse, C.**, Sedlak, D.L. 2016. Electrochemical Transformation of Trace Organic Contaminants in the Presence of Halide and Carbonate Ions. *Environ. Sci. Technol.* 50 (18), 10143-10152

Maier, M.P., **Prasse, C.**, Pati, S.G., Nitsche, S., Zhe, L., Radke, M., Meyer, A., Hofstetter, T., Ternes, T.A., Elsner, M., 2016. Isotope Fractionation of Diclofenac in Environmental & Engineered Systems: Evidence of Different Oxidation Mechanisms. *Environ. Sci. Technol.* 50 (20), 10933-10942.

Ternes, T.A., **Prasse, C.**, Lütke Eversloh, C., Knopp, G., Cornell, P., Schulte-Oehlmann, U., Schwartz, T., Oehlmann, J. Integrated evaluation concept to assess the efficiency of advanced wastewater treatment processes to eliminate pollutants and pathogens. *Environ. Sci. Technol.* 51 (1), 308-319.

2015

Prasse C., Wenk, J., Jasper, J.T., Ternes, T.A., Sedlak, D.L., 2015. Co-occurrence of Photochemical and Microbiological Transformation Processes in Open-Water Unit Process Wetlands. *Environ. Sci. Technol.* 49 (24), 14136–14145.

Schlüter-Vorberg, L., **Prasse, C.**, Ternes, T.A., Mückter, H., Coors, A., 2015. Toxification by transformation in conventional and advanced wastewater treatment: the antiviral drug acyclovir. *Env. Sci. Technol. Lett.*, 2 (12), 342–346.

Prasse C.^{**}, Stalter, D., Schulte-Oehlmann, U., Oehlmann, J., Ternes, T.A., 2015. Spoilt for choice: A critical review on the chemical and biological assessment of current wastewater treatment technologies. *Water Res.* 87, 237-270.

Brezina, E., **Prasse, C.**, Wagner, M., Ternes, T.A., 2015. Why small differences matter: Elucidation of the mechanism underlying the transformation of 2OHCBZ and 3OHCBZ in contact with sand filter material. *Environ. Sci. Technol.* 49 (17), 10449–10456.

Funke, J., **Prasse, C.**, Luetke Eversloh, C., Ternes, T.A., 2015. Oxypurinol - A novel marker for wastewater contamination of the aquatic environment. *Water Res.* 74, 257-265.

2014

Oehlmann, J. Schulte-Oehlmann, U., **Prasse, C.**, Ternes, T.A., 2014. In Response: What are the challenges and prospects? An academic perspective. *Environ. Toxicol. Chem.* 33(11), 2408-2410.

Kaiser, E., **Prasse, C.**, Wagner, M., Broeder, K., Ternes, T.A., 2014. Transformation of Oxcarbazepine and Human Metabolites of Carbamazepine and Oxcarbazepine in Wastewater Treatment and Sand Filters. *Environ. Sci. Technol.* 48(17), 10208-10216.

De Laurentis, E., **Prasse, C.**, Ternes, T.A., Minella, M., Maurino, V., Minero, C., Sarakah, M., Brigante, M., Vione, D., 2014. Assessing the photochemical transformation pathways of acetaminophen relevant to surface waters: Transformation kinetics, intermediates, and modeling. *Water Res.* 53, 235-248.

2013

Benner, J., Helbling, D.E., Kohler, H.P.E., Kaiser, E., **Prasse, C.**, et al., 2013. Is biological treatment a viable alternative for micropollutant removal in drinking water treatment processes? *Water Res.* 47(16), 5955-5976.

2012

Prasse, C., Wagner, M., Schulz, R. and Ternes, T. A., 2012. Oxidation of the Antiviral Drug Acyclovir and Its Biodegradation Product Carboxy-acyclovir with Ozone: Kinetics and Identification of Oxidation Products. *Environ. Sci. Technol.* 46, 2169-2178.

Prasse, C., Zech, W., Fisseha, I., Glaser B. 2012. Contamination and source assessment of metals, polychlorinated biphenyls and polycyclic aromatic hydrocarbons in urban soils from Addis Ababa, Ethiopia. *Toxicol. Environ. Chem.* 94(10), 1954-1979.

2011

Dabrunz, A., Duester, L., **Prasse, C.**, Seitz, F., Rosenfeldt, R., Schilde, C., Schaumann, G. E. and Schulz, R., 2011. Biological Surface Coating and Molting Inhibition as Mechanisms of TiO₂ Nanoparticle Toxicity in *Daphnia magna*. PLoS One 6.

Duester, L., **Prasse, C.**, Vogel, J. V., Vink, J. P. M. and Schaumann, G. E., 2011. Translocation of Sb and Ti in an undisturbed floodplain soil after application of Sb₂O₃ and TiO₂ nanoparticles to the surface. J. Environ. Monit. 13, 1204-1211.

Prasse, C., Wagner, M., Schulz, R. and Ternes, T. A., 2011. Biotransformation of the Antiviral Drugs Acyclovir and Penciclovir in Activated Sludge Treatment. Environ. Sci. Technol. 45, 2761-2769.

Prasse, C., Schulz, R. and Ternes, T. A., 2011. Abbau von Acyclovir und Penciclovir in der biologischen Abwasserbehandlung. Vom Wasser 109.

2010

Prasse, C., Schlusener, M. P., Schulz, R. and Ternes, T. A., 2010. Antiviral Drugs in Wastewater and Surface Waters: A New Pharmaceutical Class of Environmental Relevance? Environ. Sci. Technol. 44, 1728-1735.

Prasse, C. and Ternes, T. A. (2010). Removal of organic and inorganic pollutants and pathogens from wastewater and drinking water using nanoparticles – A review Nanoparticles in the water cycle. F. H. Frimmel and R. Niessner. Berlin, Springer: 55-80.

Slootweg, T., Alvinerie, M., Egeler, P., Gilberg, D., Kukkonen, J. V. K., Oehlmann, J., **Prasse, C.**, Sormunen, A. J. and Liebig, M., 2010. Bioaccumulation of ivermectin from natural and artificial sediments in the benthic organism *Lumbricus variegatus*. J. Soils Sediments 10, 1611-1622.

2009

Prasse, C., Löffler, D. and Ternes, T. A., 2009. Environmental fate of the anthelmintic ivermectin in an aerobic sediment/water system. Chemosphere 77, 1321-1325

Book Chapters:

Prasse, C., Miller, S.M. 2026. Sources, Fate, and Transport of Contaminants in Water and Air. In: The Environment and Your Health. Johns Hopkins University Press.

Prasse, C., Ternes, T.A. 2010. Removal of Organic and Inorganic Pollutants and Pathogens from Wastewater and Drinking Water Using Nanoparticles—A Review. In: Nanoparticles in the Water Cycle, Springer, Berlin Heidelberg, 55-79.

Prasse, C., Ternes, T.A. 2016. Application of Orbitrap Mass Spectrometry for the Identification of Transformation products. In: Comprehensive Analytical Chemistry 71, 263-282.

RESEARCH FUNDING

- American Chemical Society: ACS Graduate Student Success Grant (Role: PI); Project duration: 12/01/2025-11/30/2026, \$25,000.
- Water Research Foundation: Applying Environmental Forensics to Characterize PFAS and Precursor Compounds in Source Water (Role: Co-PI); Project duration: 04/01/2026-03/31/2028, (share allocated to my laboratory: \$125,000).

- Loudoun Water (Research Agreement): Organic contaminants present in data center wastewater using target and non-target analysis (Role: PI); Project duration: 09/01/2025-08/31/2026, \$48,270.
- NSF: Impact of Disinfectants on Release and Transformation of Microplastics and Additives from Drinking Water Pipes (Role: Co-PI; PI: Howard Fairbrother, Johns Hopkins University), Project duration: 06/15/2025-06/14/2028, \$620,000.
- FDA (Sole Source Contract): Prediction of Pesticides in Foods using High Resolution Mass Spectrometry and Artificial Intelligence/Machine Learning Workflows for Enforcement and Risk Assessment (Role: PI), Project duration: 09/01/2024-08/31/2026, \$323,939.
- Water Research Foundation: Developing Aromatic DBPs as Improved Metrics for DBP Exposure (Role: Co-PI; PI: William Mitch, Stanford University), Project duration: 05/01/2025-11/30/2026, \$235,000.
- US Environmental Protection Agency: Innovations to Generate Estimates of children's Soil/dust uptake (INGEST) (Role: Co-I; PI: Keeve Nachman, Johns Hopkins University), Project duration: 04/01/2021-06/30/2026, \$1,350,000 (share allocated to my laboratory: \$221,620).
- NSF CAREER: Development of a Novel Approach for the Identification of Toxic Byproducts and their Precursors in Oxidative Drinking Water Treatment (Role: PI), Project duration: 06/01/22 - 05/31/27, \$556,000 (share allocated to my laboratory: \$556,000).
- NIEHS Center for Community Health: Addressing Regional Maryland Environmental Determinants of Disease (CHARMED) (Role: Co-I; PI: Marsha Wills-Karp, Johns Hopkins University), Project duration: 06/01/2022-03/30/2026, \$3,313,000 (share allocated to my laboratory: \$53,359).
- NIH: Program on Occupational health and safety for Emerging Technologies – Mid Atlantic Partnership (POccET-MAP) (Role: Co-I; PI: Gurumurthy Ramachandran, Johns Hopkins University), Project duration: 05/01/2021-04/30/2026, \$1,247,726 (share allocated to my laboratory: \$50,380).

COMPLETED RESEARCH SUPPORT

- Johns Hopkins University, Center for Livable Future: Occurrence and associated health risks of the antibiotic carbadox and its main metabolites in pork products (Role: Co-PI; PI: Keeve Nachman, Johns Hopkins University), Project duration: 10/01/2023-12/31/2025, \$102,000 (share allocated to my laboratory: \$87,000).
- NIH (Subcontract): Respiratory Effects, Metal and Aldehyde exposure from e-cigarette use in young adults (REMA) (Role: PI), Project duration: 09/01/2024-08/31/2025, \$25,000.
- US Environmental Protection Agency: Innovations in sampling, (bio)analytical chemistry, and analytics to characterize disinfectant use tradeoffs in U.S. water systems for minimizing exposure to opportunistic pathogens and DBPs (Role: Co-I; PI: Raymond Hozalski, University of Minnesota), Project duration: 06/01/2023-05/13/2025, \$2,123,000 (share allocated to my laboratory: \$424,851).
- US Environmental Protection Agency: Fate and Transport of Unregulated Organic Contaminants in Biosolids - Development of a Human and Environmental Exposure Risk Framework (Role: PI), Project duration: 09/01/2021-05/11/2025, \$1,498,000 (share allocated to my laboratory: \$1,327,252).
- NSF: Understanding Polymer Additive Release and Transformations in Aquatic Environments (Role: Co-PI; PI: Howard Fairbrother, Johns Hopkins University), Project duration: 07/15/20-

- 06/30/24, \$276,612 (share allocated to my laboratory: \$149,251; co-supervision of Chemistry student working on the project with PI Fairbrother).
- Johns Hopkins University, Discovery Award: Selective PFAS removal by sustainable materials design (Role: Co-PI; PI: Rebekka Klausen, Johns Hopkins University), Project duration: 06/01/2022-05/30/2024, \$100,000 (share allocated to my laboratory: \$45,000).
 - Johns Hopkins University, Discovery Award: The Next Frontier to Improve Public Health: Exploring the Use of Artificial Intelligence to Assess the Exposome (Role: Co-PI; PI: Fenna Sillé, Johns Hopkins University), Project duration: 06/01/2022-05/30/2024, \$100,000 (share for my laboratory: \$40,000).
 - Johns Hopkins University, Alliance for a Healthier World: Urban Aquaculture for Climate Justice and Local Food Sovereignty (Role: Co-PI; PI: Nicole Labruto, Johns Hopkins University), Project duration: 06/01/2021-05/30/2024, \$100,000 (share for my laboratory: \$37,000).
 - World Health Organization (WHO), Professional Services Agreement: Testing of e-cigarettes from different regions of WHO using untargeted chemical analysis (Role: PI). Project duration: 05/01/2023-11/30/2023, \$24,500 (share for my laboratory: \$18,266).
 - Johns Hopkins Medicine, Fisher Center Discovery Program: Antiviral drugs as previously unrecognized contributors to antibiotic resistance (Role: PI), Project duration: 12/01/2021-11/30/2022, \$60,000 (share for my laboratory: \$60,000).
 - Minnesota Department of Health: Assessment of Treatment Options to Remove Poly- and Perfluorinated Alkyl Substances from Groundwater – Cottage Grove, MD (Role: PI), Project duration: 08/12/2019-07/31/2021, \$120,000 (share for my laboratory: \$120,000).
 - Water Research Foundation: Assessing the Contribution of Water Reuse Practice to Nutrient Impaired Water (Role: PI), Project duration: 04/01/2019-04/30/2020, \$50,000 (share for my laboratory: \$50,000).
 - Johns Hopkins University- Space@Hopkins Seed Grant Program: Deconvolving the sulfur isotope record of early Earth ecosystems: Development of an experimental system to explore isotopic signatures of natural organic matter consumption by microorganisms (Role: Co-PI; PI: Maya Gomes, Johns Hopkins University). Project duration: 09/01/2018-08/31/2019, \$24,900.

INVITED CONFERENCE PRESENTATIONS

Prasse, C., From Molecular Complexity to Environmental Risk: Prioritizing Organic Contaminants in Environmental Mixtures. Organic Geochemistry Gordon Research Conference, August 2-7, 2026, Holderness, NH.

Prasse, C. From Single Compounds to Complex Mixtures: Uncovering and Prioritizing Transformation Products in Natural and Engineered Systems (Keynote). NonTarget2026, April 12-17, 2026, Ascona, Switzerland.

Prasse, C., Krall, K., Grace, D., Rorie, A., Maycock, C. Into the unknown: Identification and prioritization of previously unknown organic contaminants in drinking water. ACS Spring Meeting, March 22-26, 2026, Atlanta, GA.

Prasse, C., Goddard J.J., Is this safe to [eat, breath, drink]? National Academy of Sciences' thirty-sixth annual Frontiers of Science symposium, March 5-7, 2026, Irvine, CA.

Prasse, C., Grace, D., Newmeyer, M.N., Brueck, C.L., Lupolt, S., Lyu, Q., Nachman, K.E. Combining non-targeted analysis with computational and in chemico hazard assessment approaches to support

prioritization of organic contaminants in complex environmental mixtures. PacifiChem Conference, December 15-20, 2025, Honolulu, HI.

Prasse, C., Human and Environmental Exposure Framework for Biosolids (invited presentation). 4th EPA New Approach Methods Conference, November 5-6, 2024, Research Triangle Park, NC.

Prasse, C., Combining non-targeted analysis with computer-based hazard comparison approaches to support prioritization of unregulated organic contaminants in environmental media (invited presentation). NACRW annual meeting, July 15-17, 2024, Ft. Lauderdale, FL.

Prasse, C., Grace, D., Zhang, Z., Hendrickson, H., Mechanistic insights into (toxic) carbonyl formation during ozonation of phenols (invited presentation). Special Symposium in Honor of Joel Pedersen, ACS Fall 2023 Meeting. August 13-17, 2023, San Francisco, CA.

Prasse, C. Rethinking Water Treatment and Water Quality Assessment (invited presentation). Urbanization, Water and Food Security Gordon Research Conference. July 16 – 21, 2023. Lucca, Italy.

Prasse, C. Novel DBPs from Reactions of Chemical Oxidants with Phenolic Compounds (invited presentation). Water Disinfection, Byproducts and Health Gordon Research Conference. July 30 – August 4, 2023. Mt. Holyoke, MA.

Prasse, C. The Human Exposome: Assessing Exposures to Complex Chemical Mixtures and Elucidating Associated Health Risks (invited presentation). Environmental Science: Water Gordon Research Conference. June 19-24, Holderness, NH.

Prasse, C., Zhang, Z., Grace D. Mind the gap: New insights into ring cleavage product formation during the reaction of phenols with chlorine and ozone (invited presentation). Special Symposium in Honor of Urs von Gunten, ACS Spring 2022 Meeting. March 18-24, 2022, San Diego, CA.

Prasse C. Reactivity-directed analysis (RDA): A novel approach for the identification of toxicants in drinking water at 7th International Conference on Emerging Contaminants (invited presentation). September 13-14, 2021.

INVITED SEMINAR PRESENTATIONS

Prasse C. Embracing complexity: Novel approaches to identify and prioritize organic contaminants in the environment (invited seminar). Virginia Tech, November 14, 2025.

Prasse C. Embracing complexity: Novel approaches to identify and prioritize organic contaminants in the environment (invited seminar). Bucknell University, October 30, 2025.

Prasse, C. Assessing complex environmental contaminant mixtures: From exposures to mitigation strategies (invited seminar). Carnegie Science Department of Embryology. Baltimore, March 11, 2024.

Prasse, C. Application of High-Resolution Mass Spectrometry to Elucidate Chemical Exposures (invited seminar). Environmental Metrology & Policy Program Seminar Series. Georgetown University, Washington, DC, November 10, 2023.

Prasse, C., Chemical exposures: Novel approaches for the identification of toxic organic chemicals in complex mixtures (invited seminar). Civil & Environmental Engineering Seminar Series, George Washington University, March 10, 2023.

Prasse, C. Chemical exposures: Novel approaches for the identification of toxic organic chemicals in complex mixtures (invited seminar). Graduate Seminar Series, University of Delaware, October 21, 2022, Newark, DE.

Prasse, C. Chemical exposures: Novel approaches for the identification of toxic organic chemicals in complex mixtures (invited seminar). Distinguished Warren Seminar Series, University of Minnesota, October 7, 2022, Minneapolis, MN.

Prasse, C. Chemical exposures: Novel approaches for the identification of toxic organic chemicals in complex mixtures (invited seminar). Environmental Engineering Graduate Seminar, Michigan Technological University, September 19, 2022.

Prasse, C. Chemical exposures: Novel approaches for the identification of toxic organic chemicals in complex mixtures (invited seminar). Parsons Laboratory Seminar Series, MIT, September, 23, 2022, Boston, MA.

Prasse, C. Chemical exposures: Novel approaches for the identification of toxic organic chemicals in complex mixtures (invited seminar). Civil and Environmental Engineering Graduate Seminar, Duke University, September, 5, 2022, Durham, NC.

Prasse, C. Reactivity-directed analysis: A novel approach for the identification of toxic organic chemicals in complex mixtures (invited seminar). Molecular Engineering Seminar. Molecular Engineering & Sciences Institute. April, 19, 2022, Seattle, WA.

Prasse, C. Reactivity-directed analysis: A novel approach for the identification of toxic organic chemicals formed during water treatment with chemical oxidants (invited seminar). George Mason University. April 11, 2022, Fairfax, VA.

Prasse C. Reactivity-directed analysis (RDA): A novel approach for the identification of toxicants in drinking water (invited seminar). Environmental Research Center (UFZ), Leipzig, Germany. Health Planet Lecture series. Jan 25, 2022.

Prasse C. Exposure to antivirals with antibacterial effects leads to antimicrobial resistance (invited seminar). Johns Hopkins Medicine, Department of Infectious Disease Clinical and Research Topics meeting. September 21st 2021.

Prasse C. Reactivity-directed analysis (RDA): A novel approach for the identification of toxicants in drinking water (invited seminar) at University of Illinois, Chicago. April 15th, 2021.

Prasse C. Reactivity-directed analysis (RDA): A novel approach for the identification of toxicants in drinking water (invited seminar) at Division of Analytical and Environmental Toxicology (AET) Seminar Series at University of Alberta. March 19th, 2021.

Prasse C. Reactivity-directed analysis (RDA): A novel approach for the identification of toxicants in drinking water – Linking environmental chemistry and molecular toxicology (invited seminar) at ACS California and Maryland section. January 13th, 2021.

Prasse, C. Trace Organic Contaminants and their Transformation Products in the Environment – Challenges for Environmental Health and Engineering (invited seminar). Cornell University, Environmental Processes Special Seminar April 22nd, 2019.

Prasse, C. Trace Organic Contaminants and their Transformation Products in the Environment – Challenges for Environmental Health and Engineering (invited seminar). University of Maryland, School of Public Health, MIAEH Seminar, April 30th, 2019.

SERVICE

PROFESSIONAL SERVICE AND AFFILIATIONS

- Invited participant (only participant from academia) Water Research Foundation (WRF) Research Planning Summit 2026
- External PhD thesis examiner:
 - Kunyang Zhang, University of Zurich, Switzerland (advisor: Kathrin Fenner), August 26, 2025
 - Emma Palm, University of Luxembourg, Luxembourg (advisor: Emma Schymanski), July 13, 2026
- Member of the International Panel on Chemical Pollution (IPCP)
- Vice Chair 2027/Chair 2029 Gordon Research Conference on Water Disinfection, Byproducts and Health
- Member of the German Water Chemistry Society, American Chemical Society (ACS), Association of Environmental Engineering and Science Professors (AEESP), Society of Toxicology (SOT)
- Association of Environmental Engineering and Science Professors (AEESP) Community-Engaged Research Taskforce (2021 – 2024)
- Founding steering committee member and principal investigator at the Johns Hopkins Exposome Collaborative (2019 – present)
- Early Career Editorial Board member, Journal of Environmental Sciences (2023 – present)
- Guest Editor, Journal of Environmental Sciences Special Issue on *Re-Imagining Drinking Water Safety based on 21st Century Science: Microbial Pathogens, Emerging Contaminants, Byproducts, and Health Risks* (June 2022).
- Guest Editor, Current Opinion in Environmental Science & Health on *DBPs - Emerging disinfection by products in water* (July 2025).
- Founder and head of the working group ‘Oxidative Processes in Water Treatment’ within the German Water Chemistry Society (2013 – 02/2015; 03/2015 – present: regular member)
- Chair, Gordon Research Seminar Water Disinfection, Byproducts, and Health, 2019
- Symposium Chair, ACS Spring and Fall Annual meeting, 2019 - present; Environmental Health & Toxicology
- Symposium Chair, ACS Fall meeting 2022; Disinfection & Oxidation Byproducts in Water Treatment
- Session Chair, AEESP meeting 2022; Assessing Health Impacts of Exposures: Chemical Exposures
- Review panel member: NSF CBET & IRES program, NIH/FDA program and NIEHS Superfund Research Program
- External proposal reviewer: Swiss National Science foundation; Austrian Science Fund; Vienna Science and Technology Fund; Novo Nordisk Foundation

- Journal reviewer: Science; Science Advances; Nature Communications; Nature Sustainability; Nature Scientific Data; Nature Water; Nature Scientific Reports; Water Research; Environmental Science & Technology; Environmental Science & Technology Letters; iMeta; ACS ES&T Water; Environmental Science: Processes and Impacts; Science of the Total Environment; Environmental Toxicology & Chemistry; Environmental Science & Pollution Research; Environment International; Inhalation Toxicology; Chemical Research in Toxicology; Critical Reviews in Biotechnology; Analytical and Bioanalytical Chemistry; Trends in Environmental Analytical Chemistry; Chemosphere; International Journal of Environmental Research and Public Health; Current Opinion in Environmental Science and Health.