

**CRESTEN MANSFELDT**

Assistant Professor  
Department of Civil, Environmental, and Architectural  
Engineering  
University of Colorado, Boulder

1111 Engineering Drive  
428 UCB  
Boulder, CO 80309-0428, USA  
[cresten.mansfeldt@colorado.edu](mailto:cresten.mansfeldt@colorado.edu)

**EDUCATION**

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08/2007-01/2013     **Cornell University, Department of Civil and Environmental Engineering**  
PhD Studies in Environmental Engineering and Environmental Microbiology

09/2004-06/2007     **University of Minnesota, Department of Civil and Environmental Engineering**  
Undergraduate Studies in Civil and Environmental Engineering

**ACADEMIC DEGREES & ENGINEERING LICENSE**

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2013     **Doctoral Degree in Environmental Engineering with Minors in Environmental Microbiology and Environmental Quality, Cornell University**  
Doctoral Thesis: “Data driven hypothesis modeling of *Dehalococcoides mccartyi*: predicted biology and biomarkers of stress in two mixed microbial communities” Advisor: Dr. Ruth Richardson, Committee: Dr. James Gossett, Dr. Stephen Zinder

2008     **Fundamentals of Engineering License**

2007     **Bachelors of Civil Engineering, University of Minnesota, Department of Civil and Environmental Engineering**  
Honors Thesis: “Isolation and purification methods for an anaerobic dechlorinator capable of polychlorinated biphenyl degradation”  
Advisor: Dr. Paige Novak

**PROFESSIONAL EXPERIENCE**

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02/2023-Current     **University of Colorado Boulder, Interdisciplinary Quantitative (IQ) Biology Program**  
Affiliate Faculty

07/2019-Current     **University of Colorado Boulder, Department of Civil, Environmental, and Architectural Engineering**  
Assistant Professor

10/2015-06/2019     **Swiss Federal Institute of Aquatic Science and Technology (Eawag), Department of Environmental Chemistry** Postdoctoral research position, Advisor: Dr. Kathrin Fenner

12/2012-04/2015     **Cornell University, Department of Biological and Environmental Engineering (BEE)**  
Postdoctoral research position, Advisors: Dr. Beth Ahner, Dr. Ruth Richardson

08/2014-08/2015     **Vireo Quantum Instruments**  
Startup-based research position

02/2013-09/2015     **American Journal of Experts**  
Contracted Editor

05/2011-07/2011     **Helmholtz Zentrum für Umweltforschung (UFZ)**  
Visiting researcher during PhD studies

- 08/2007-12/2012 **Cornell University, Department of Civil and Environmental Engineering (CEE)**  
Graduate student research assistant
- 08/2006-08/2007 **University of Minnesota, Department of Civil and Environmental Engineering**  
Undergraduate student research assistant
- 05/2006-08/2006 **National Institute of Standards and Technology**  
Summer Undergraduate Research Fellow (SURF)
- 04/2005-05/2006 **University of Minnesota, Department of Civil and Environmental Engineering**  
Undergraduate student research assistant

## **AWARDS & EDUCATIONAL GRANTS**

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- 2022 **Timmerhaus Presidential Scholar**  
University of Colorado Boulder; \$17000 in support of a collaborative project with Denver Public Schools
- 2022 **CU Boulder Thrive Grant**  
University of Colorado Boulder, Faculty Success Program; \$4500 in support of an undergraduate researcher
- 2021 **Sterns Faculty Staff Service Award**  
University of Colorado Boulder, Alumni Association; In recognition for participation on the Pandemic Response Science Team
- 2021 **Departmental Service Award**  
University of Colorado Boulder, Department of Civil, Environmental and Architectural Engineering
- 2018 **Best Student/PostDoc Poster Prize**  
Gordon Research Conference: Environmental Sciences – Water
- 2011 **Graduate School International Research Fellowship**  
Cornell University
- 2011 **Biogeochemistry and Biocomplexity Small Grant**  
Cornell University
- 2008 **Graduate Research Fellowship (GRF)**  
National Science Foundation (NSF)
- 2007 **Olin Fellowship**  
Cornell University
- 2007 **Claire and Simon Benson Award – Outstanding Undergraduate**  
University of Minnesota, Dept. of Civil and Environmental Engineering
- 2007 **Summa Cum Laude with Highest Honors (GPA 3.987/4.0)**  
University of Minnesota
- 2004 **University of Minnesota Maroon and Gold Fellowship**

**DETAILED FUNDING BREAKDOWN****Awarded External Grant**

ID	Year	Agency	Team	Period	Title	Total Award	Mansfeldt Portion
AEG1	2020	Environmental Protection Agency	C. Mansfeldt (CU PI)	Jul 2021–Jun 2024	<i>EcoGenoRisk</i> : Identifying Potential Ecological Risks Posed by a Novel Genome	\$337,616	\$337,616
AEG2	2023	United States Department of Agriculture	C. Mansfeldt (CU PI)	Jul 2023-Jun 2027	STRATAGEM: Standardizing Techniques to Reinforce Agricultural-runoff Threat Assessments for Genetically Engineered Microorganisms	\$650,000	\$650,000
AEG3	2023	Colorado Water Conservation Board	C. Mansfeldt (CU PI)	Jul 2023-Jun 2024	Water Management after Wildfires: Developing Standardized Testing Methods	\$50,000	\$50,000
<b>Total</b>						<b>\$1,037,616</b>	<b>\$1,037,616</b>

**Awarded External Collaborating Grant**

ID	Year	Agency	Team	Period	Title	Total Award	Mansfeldt Portion
AECG1	2022	Environmental Protection Agency	K. Linden (CU PI), R. Summers, S. Cook, A. Javernick-Will, C. Mansfeldt (Co-PI)	Sep 2022–May 2026	Unlocking the Nationwide Potential of Water Reuse	\$1,660,252	\$225,000
AECG2	2022	City of Boulder	D. McKnight (CU PI), J. Korak, C. Mansfeldt (Co-PI)	May 2022-Apr 2023	Monitoring Recovery of Coal Creek Ecosystem following the Marshall Fire	\$10,000	\$0
AECG3	2022	Colorado Water Conservation Board	J. Korak (CU PI), D. McKnight, C. Mansfeldt (Co-PI)	Jun 2022-Dec 2023	Monitoring the Riparian Ecosystem after the Marshall Fire	\$198,225	\$0
AECG4	2022	Boulder County	J. Korak (CU PI), D. McKnight, C. Mansfeldt (Co-PI)	Feb 2022-Dec 2022	Monitoring the Recovery of the Coal Creek Ecosystem Following the Marshall Fire	\$9,999	\$0
AECG5	2023	City of Boulder	D. McKnight (CU PI), K. Lininger, J. Korak, C. Mansfeldt (Co-PI)	Apr 2023-Jan 2024	Assessing Hyporheic Processes in the Upper Coal Creek Ecosystem	\$10,000	\$0
<b>Total</b>						<b>\$1,888,476</b>	<b>\$225,000</b>

**Awarded Internal Grant**

ID	Year	Department/Source	Team	Period	Title	Total Award	Mansfeldt Portion
AIG1	2020	Pandemic Response Office	C. Mansfeldt (CU PI)	Jul 2020-Aug 2021	CUSew: On Campus Sewer Monitoring for SARS-CoV-2	\$614,862	\$614,862
AIG2	2022	CU Faculty Affairs	C. Mansfeldt (CU PI)	Jul 2022-May 2023	Thrive Grant	\$4,500	\$4,500
AIG3	2023	CU RISE	C. Mansfeldt (CU PI)	May 2023-Dec 2023	Incorporating Wastewater-Effluent Adapted Microbial Communities and Sewer Infrastructure into the Management of Wildland-Urban Interface Fire Debris in Water-Stressed Regions	\$12,000	\$12,000
<b>Total</b>						<b>\$631,362</b>	<b>\$631,362</b>

<b>Total</b>						<b>\$3,557,454</b>	<b>\$1,893,978</b>
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**Pending Grants**

ID	Year	Agency	Team	Submitted; Period	Title	Total Award	Mansfeldt Portion
PG1	2023	National Science Foundation	C. Mansfeldt	Ju; 2023; 2024-2028	CAREER: Biotransformation Exploration: Increasing the Nuance and Speed of Pathway Identification by Re-analyzing Enzyme Data (BE:INSPIRED)	\$550,000	\$245,501
PG2	2022	Army Research Office	F. Rosario-Ortiz (CU PI), C. Mansfeldt, H. Michelson	Sep 2022; May 2024-Apr 2026	Assessment of chemical contamination in surface water after wildfires	\$650,000	\$216,667
<b>Total</b>						<b>\$1,200,000</b>	<b>\$462,168</b>

**Declined Grants**

ID	Year	Agency	Team	Title	Total Award
DG1	2019	Environmental Protection Agency	C. Mansfeldt (CU PI), J. Kasprzyk, D. McKnight, F. Rosario-Ortiz, S. Cook,	Experimental and Modeling Investigation of Near-Source Bioreactors and Constructed Wetlands for Nutrient Management	\$999,999
DG2	2019	EREF	C. Mansfeldt (CU PI)	Microbial Impact on Material Quality: Characterizing Recycling Microbiomes	\$290,000
DG3	2020	Department of Energy	C. Mansfeldt (CU PI)	CAREER: Identifying the characteristics and resiliency of the soil microbial community mediating the carbon and nitrogen cycle in grasslands along a depth profile	\$750,000
DG4	2020	Department of Energy	C. Mansfeldt (CU PI)	COPBOOKS : Computationally-Optimized Processing and Bolstering of Omic-data with Ontology Knowledgebase Synchronization	\$296,244
DG5	2020	EREF	C. Mansfeldt (CU PI)	Microbial Exposure Assessment : Identifying Risk to Operators	\$220,000
DG6	2020	Emergent Ventures	C. Mansfeldt (CU PI)	Expanding Wastewater Based Epidemiology to Monitor the Full Pathogen Profile Inclusive of SARS-CoV-2	\$93,500
DG7	2020	Department of Energy: BETO	Z. Popovic (CU PI), C. Mansfeldt, S. Cook	Scalable Microwave Pyrolysis for Wet Biowaste Conversion to Biofuel	\$2,368,850
DG8	2020	National Science Foundation:RoL	C. Mansfeldt (CU PI)	Differentiating the sources of biomass decay: Monitoring and modelling the influence of protist predation on bacterial diversity	\$499,636
DG9	2021	Beckmann Foundation	C. Mansfeldt (CU PI)	Infectious Stampede: Monitoring and modeling the exchange of pathogens between humans, livestock, and wildlife	\$600,000
DG10	2021	National Science Foundation	C. Mansfeldt (CU PI), W. Srubar, Z. Popovic, J. Korak	Opportunities for Biological Carbon Capture, Storage, and Utilization at the Water-Energy-Materials Nexus	\$1,740,624
DG11	2021	Environmental Protection Agency	S. Meschke (University of Washington PI), R. Rodriguez, C. Mansfeldt (CU Co-PI), K. Linden	Viral & Surrogate Targets for Assessment of Water Reuse Process Performance (VISTA-WARPP)	\$1,240,000
DG12	2021	National Science Foundation	B. Demings-Adams (CU PI), W. Adams, J. Li, C.Mansfeldt (Co-PI)	Microbe-Enhanced Plant Productivity and Nutritional Quality under Elevated Carbon Dioxide	\$839,296
DG13	2021	National Science Foundation	R. Poretsky (PI U Chicago), K. Van Meter (U Chicago), A Giometto (Cornell), D. Helbling (Cornell), G. Wells (Northwestern), C. Mansfeldt (Co-PI CU)	Collaborative Research: Unraveling microbial community assembly at immigration interfaces between engineered and natural systems	\$3,000,000

C. Mansfeldt <sup>A</sup>

Curriculum Vitae

DG14	2021	CU Boulder RISE	C. Mansfeldt (PI CU), W. Johnson (CU PhD Student)	Affordable and Rapid Detection of Pathogens of Concern in the Built Environment	\$15,000
DG15	2021	National Science Foundation	C. Torres-Machi (CU PI), J. Escobar, B. Wham, C. Mansfeldt, E. Thomas, G. Whiting, M. Karimzadeh, B. Muller, Q. Liv, S. Glade, S. Tabatabaie, S. Roudbari	SCC-PG: Smart monitoring systems for interconnected and geographically-distributed infrastructure that enhance community resilience	\$125,000
DG16	2021	CU Boulder RIO SEED	B. Demings-Adams (CU PI), C.Mansfeldt (Co-PI)	Microbe-Enhanced Photosynthetic Productivity under Abiotic Stress	\$49,999
DG17	2021	Water Research Foundation	S. Masters (CU PI), K. Linden, C. Mansfeldt (Co-PI, CU)	Understanding the Mechanisms of Chlorine and Chloramine Impact on Opportunistic Pathogens in Distribution	\$250,000
DG18	2022	National Science Foundation: ECO-CBET	C. Mansfeldt (CU PI), W. Srubar, J. Korak, Z. Popovic	Preliminary ECO-BET: Opportunities for Biological Carbon Capture, Storage, and Utilization at the Water-Energy-Materials Nexus	\$2,000,000
DG19	2022	Howard Hughes Medical Institute	R. Parker (CU PI), S. Sawyer, D. Larremore, D. Perez, C. Mansfeldt	Influenza A segment reassortment: Technological development for analysis in model systems and monitoring in nature.	\$6,614,626
DG20	2022	PEW Biomedical Scholar	C. Mansfeldt (CU PI)	Removing barriers to waste: Knocking down sewerage matrix effects on the detection of hazards and human exposure biomarkers whereas building-up best practices and community acceptance of wastewater surveillance	\$300,000
DG21	2022	Environmental Protection Agency	S. Masters (CU PI), C. Mansfeldt, R. Summers, N. Fierer (Co-PI, CU)	National Assessment of Opportunistic Pathogens and Unregulated DBPs Occurrence in Drinking Water Distribution Systems	\$1,403,992
DG22	2022	Centers for Disease Control	C. Mansfeldt	Sewerage matrix shifts influence on multiplex detection of reference biological hazards	\$35,995
DG23	2023	CU Boulder Office of Outreach	C. Mansfeldt	Assisting the City of Boulder's Boulder Creek Biomonitoring	\$11,000
DG24	2023	CU Environmental Engineering Program SEED Grants	C. Mansfeldt (CU PI), K. Lininger	BioFlowTrace: Contextualizing the sensitivity of public-health relevant biological signals to the geomorphic context of natural stream networks	\$33,000
DG25	2023	Congressional Request - Office of Joe Neguse	C. Mansfeldt (CU PI), F. Rosario-Ortiz, J. Korak, D. McKnight, M. Gooseff	Water Resources Under Fire: Codeveloping Best Management Practices for Managing Water Quality when Responding to Wildfires at the Wildland Urban Interfaces in Colorado	\$725,000
DG26	2023	National Science Foundation:RoL	(CU Boulder) C. Mansfeldt (PI), S. Masters, J. Korak, J. Kasprzyk, N. Feirer; (CU Denver) T. Heikkilam, C. Weible, D. Crow.	Collaborative Research: URol:ASC: Pathogens, Policy, and People: Controlling Urban Water Ecosystems through Technology-Society Synchronization (P3:CUWETS)	\$3,000,000
<b>Total</b>					<b>\$27,501,761</b>

**TEACHING****CLASSROOM BASED INSTRUCTION**

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2019-Current	<b>University of Colorado Boulder</b>	
	Spring 2020, '21	CVEN 4834/5544 – Solid Waste
	Fall 2021, '23	
	Fall 2019, '20, '22	CVEN 5484 - Applied Microbiology and Toxicology
	Spring 2022, '23	EVEN 4484 - Introduction to Microbiology
	Fall 2022, '23	CVEN 5514 - Bioremediation

**RESEARCH BASED INSTRUCTION**

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**University of Colorado - Boulder***Doctoral Students (7 current)*

- William Johnson (2021-Current), Mackenzie Bowden (2022-Current), Allison Cook (Spring 2023-Current), Vanessa Maybruck (Spring 2023-Current, NSF GRFP), John Docter (Fall 2023-Current), Christine Gleicher (Fall 2023-Current, NSF GRFP, LSAMP), Taylor Cason (Fall 2023-Current)

*Masters Students (1 graduated)*

- Anna Ulanova (2021-2023)

*Hourly Undergraduate Students (22 former, 1 current)*

- Michaela Alkire, Claire Butler, Elle Coe, Nicolas Freeman, Heidi Heuer, Madeline Karr, Sara Key, Jeffery Jones, Keaton Jones, Kamila Khojalakova, Kiersten Maxwell, Lauren Nelson, Nikolas Ortega, Emily Saldana, Lewis Salveson, Rachel Shea, Trace Shimek, Samiha Singh, Kate Tomlinson, Jorge Vargas-Barriga, Bailey Vigil, Julia Witteman (all completed 2021); Eric Steinmetz (Fall 2023-Current)

*Discovery Learning Apprenticeship (1 former)*

- Jessica Vinson, 2022-2023

*Summer Program for Undergraduate Research (1 former)*

- Connor Gilpatrick, 2022-2023

*Hourly Post Baccalaureate Students (8 former)*

- Jacob Lilienfeld, Shelby Litton, John Maggi, Kerry O'Connor, Kevin Pulley, Breanna Real, Paul Wilkerson, Gordon Zak (all completed 2021)

*Post Master's Students (1 former)*

- Katelyn Reeves (completed 2022 and entered industry)

*Lab Technicians (2 former)*

- Antonio Feula, Jennifer Liebig (both Jan – May 2021)

*PhD Thesis Committee Member (2 former; 1 Current)*

- Megan Robinson (Electrical Engineering, 2023)
- Emmalee Biesiada (Environmental Engineering, 2023)
- Lane Allen (Environmental Engineering, Current)
- Brooke Marten (Environmental Engineering, Current)

*Master's Thesis Committee Member (2 former)*

- Annamarie Guth (2023)
- Alex Nolan (2021)

*Undergraduate Honor's Thesis Committee Member (2 former)*

- Sydney Prenatt (Environmental Sciences, 2023)
- Abigail Weeks (Political Science, 2021)

*Independent Study*

- Timothy Zoellick (Spring 2023, Graduate Level, *Solid Waste from Wildfires*)

*Faculty Advisor on Graduate Student External Grants*

- William Johnson. *Evaluation of Simulated Wildfire and WUI-fire Ash Through Toxicological Assays*. **2023**. USGS. \$15,000.
- Mackenzie Bowden. *Evaluation of Polycyclic Aromatic Hydrocarbons in Ash and Surface Waters after Fires at the Wildland-Urban Interface*. **2023**. USGS. \$15,000.

**University of Colorado Boulder Interdisciplinary Quantitative (IQ) Biology Program Affiliate Faculty**

*Rotation Student*

- Vanessa Maybruck (Winter 2023, Applied Math)

*Rotation Team*

- Vanessa Maybruck, Catherine Fontana, Rachael Billings (Spring 2023, Co-Advised with Lizzy Trower)

**Swiss Federal Institute of Aquatic Science and Technology (Eawag), Department of Environmental Chemistry**

Supervisor of two master theses at ETH Zürich

- Marcel Müller, 2018 “Cometabolic Biotransformation of Micropollutants using Pure Enzymes.” Continuing as an ETH PhD Student.
- Matteo Fermini, 2018 “Ion Trapping in Protozoa: Evaluation of a Competitive Relationship between Amine-Containing Micropollutants and Ammonia”

**FURTHER TRAINING**

**2023 University of Colorado Boulder Research Innovation Office (RIO) Faculty Fellow**

Leadership training workshop series focused on developing communication, management, and inclusivity.

**2022 NSF Learning by Design**

Two module active learning course development workshop program hosted at CU Boulder over 2022-2023.

**2020 CU Boulder Leadership Education for Advancement and Promotion (LEAP)**

Office of Faculty Affairs developmental workshop series for early career faculty.

**COMMUNITY ENGAGEMENT/SERVICE****OUTREACH & SERVICE ACTIVITIES**

2023-Current	CU Boulder EVEN Undergrad Program Committee Member
2023-Current	Society of Environmental Engineers Faculty Mentor
2023-Current	EVEN Program Seminar Organizer
2022-Current	National Wastewater Surveillance System Center of Excellence Advisory Committee Member
2022-2023	University of Colorado Boulder Environmental Engineering Program Co-Associate Director of Graduate Studies
2022-Current	AEESP Sustaining Members Subcommittee Member
2022-Current	Marshall Fire Coal Creek Monitoring Network Member
2020-Current	AEESP Distinguished Lecture Committee Member
2020-Current	Front Range CDPHE Funded Wastewater-Based Epidemiology SARS-CoV-2 Collective Committee Member
2020-2021	University of Colorado COVID Testing Committee Member
2020	CEAS Sanitation and PPE Committee Member
2019-2020	CU Boulder EVEN Grad Program Committee Member
2019-Current	CU Boulder CEAE Grad Program Committee Member

**CONFERENCE ORGANIZATION**

2020: Reconnecting Environmental Assistant Professors

**CONFERENCE WORKSHOP ORGANIZATION**

Sept 2023: Balancing public health surveillance with sewer services: Managing microbes as contaminants, catalysts, and data. Sept 10. Co-Chair. IWA MEWE, Brisbane, Australia.

June 2023: Evolving from “Best Practices” to “Best Partnerships”: the Ethics of Wastewater-Based Surveillance when Supporting Community Health. June 18, 2023. Workshop Chair. AEESP Conference, Boston, MA

**INVITED WORKSHOP ATTENDANCE**

June 2023: NSF Use-Inspired Research Workshop (In Person, Boise, Idaho)

May 2022: NSF Innovation Ecosystems for Adaptive Sustainable Health (Virtual)

April 2022: NSF Using the Rules of Life - Achieving a Sustainable Future (Virtual)

**PEER REVIEWING ACTIVITIES**

Department of Energy BER Grant Review Panel 2023, National Science Foundation ECO-CBET Grant Review Panel Dec 2021, Natural Sciences and Engineering Research Council of Canada, Engineering Science and Technology (ES&T), Water Research, Chemosphere, Water and Environment Journal, Environmental Science: Water Research & Technology, Journal of Hazardous Materials, Biotechnology for Biofuels, Journal of Applied Phycology, Applied Microbiology and Biotechnology

**PROFESSIONAL SOCIETY MEMBERSHIP**

Association of Environmental Engineering and Science Professors, International Society of Microbial Ecology, American Society of Microbiology, American Chemical Society, Water Environment Federation, Solid Waste Association of North America, International Water Association



**PRESENTATIONS & PUBLICATIONS****PUBLICATIONS:**

(Underlined are papers Mansfeldt Serves as Corresponding Author; Bolded indicates Mentored Students)

- JX. **Ulanova, A., Mansfeldt, C.** *EcoGenoRisk: Developing a Computational Risk Assessment Tool for Synthetic Biology.* Under Revision. *Environmental Pollution.*
- JX. Philo, S.; De Leon, K., Noble, R., Zhou, N., Alghafri, R., Bar-Or, I., Darling, A., D'Souza, N., Hachimi, O., Kaya, D., Kim, S., Kuhn, K., Layton, B., Mansfeldt, C., Radniecki, T., Ram, J., Saunders, L., Shrestha, A., Stadler, L., Steele, J., Stevenson, B., Bibby, K., Boehm, A., Halden, R., Delgado-Vega, J. *Wastewater surveillance for bacterial targets: current challenges and future goals.* Under Review. *Applied and Environmental Microbiology.*
- JX. Thurman, M., Ferrer, I., **Bowden, M.,** Mansfeldt, C., Rhodes, C., Fegel, T., Rosario-Ortiz, F. *Occurrence of Benzene Polycarboxylic Acids (BPCAs) in Ash and Stream Water after the Cameron Peak Fire.* Under Revision. *Environmental Science and Technology: Water*
- JX. Maal-Bared R., Brisolaro, K., Knight, M., Mansfeldt, C. *To Sample or not to Sample: a governance-focused decision tree for wastewater service providers considering participation in wastewater-based testing (WBT) in support of public health programs.* Revision under Review. *Science of the Total Environment.*
- J22. Bowes, D., Darling, A., Driver, E., Kaya, D., Maal-Bared, R., Lee, L., Goodman, K., Adhikari, S., Aggarwal, S., Bivins, A., Bohrerova, Z., Cohen, A., Duvallet, C., Elnimeiry, R., Hutchison, J., Kapoor, V., Keenum, I., Ling, F., Sills, D., Tiwari, A., Vikesland, P., Ziels, R., and Mansfeldt, C. **2023.** Structured Ethical Review for Wastewater-Based Testing in Support of Public Health. *Environmental Science & Technology*  
DOI: 10.1021/acs.est.3c04529
- J21. Mansfeldt, C., Maal-Bared, R, Kaya, D, Bowes, D.A., Keenum, I., Aggarwal, S., Tiwari, A., Hutchison, J.M. **2023.** Unveiling the Targeted Opportunities and Universal Challenges of Wastewater-Based Surveillance for Public Health. *ACS ES&T Water.* DOI: 10.1021/acsestwater.3c00291
- J20. **Johnson, W., Reeves, K., Liebig, J., Feula, A., Butler, C., Alkire, M., Singh, S., Litton, S., O'Connor, K., Jones, K., Ortega, N., Shimek, T., Witteman, J.,** Sampling Team Collaborators, Bjorkman, K., and Mansfeldt, C. **2022.** Effectiveness of building-level sewage surveillance during both community-spread and sporadic-infection phases of SARS-CoV-2 in a university campus population. *FEMS Microbes.* DOI: 10.1093/femsmc/xtac024
- J19. Fierer, N, Holland-Moritz, H., Alexiev, A., Bather, H., Dragone, N.B., Friar, L., Gebert, M.J., Gering, S., Henley, J.B., Jech, S., Kibby, E.M., Melie, T., Patterson, W.B., Peterson, E., Schutz, K., Stallard-Olivera, E., Sterrett, J., Walsh, C., & Mansfeldt, C. **2022.** A metagenomic investigation of spatial and temporal changes in sewage microbiomes across a university campus. *Msystems*, pp.e00651-22. DOI: 10.1128/msystems.00651-22
- J18. Bivins, A., Kaya, D., Ahmed, W., Brown, J., Butler, C., Greaves, J., Leal, R., Maas, K., Rao, G., Sherchan, S., Sills, S., Sinclair, R., Wheeler, R.T., and Mansfeldt, C. **2022.** Passive sampling to scale wastewater surveillance of infectious disease: Lessons learned from COVID-19. *Science of The Total Environment.* 835:155347. DOI: 10.1016/j.scitotenv.2022.155347

- J17. Reeves, K., Liebig, J., Feula, A., Saldi, T., Lasda, E., Johnson, WJ, Lilienfeld, J, Maggi, J.R., Pulley, K., Wilkerson, PJ, Real, B, Zak, G, Davis, JC, Fink, MR, Gonzalez, P, Hager, CR, Ozeroff, C, Tat, KL, Alkire, ML, Butler, CE, Coe, E, Darby, J, Freeman, N, Heuer H, Jones, JR, Karr, M, Key, S, Maxwell, K, Nelson, L, Saldana, EM, Salvesson, L, Shea, R, Tomlinson, K, Vargas-Barriga, J, Vigil, B, Brisson, G, Parker, R, Leinwand, LA, Bjorkman, KK, and Mansfeldt, C. 2021.** High-resolution within-sewer SARS-CoV-2 surveillance facilitates informed intervention. *Water Research*. 204: 117613. DOI: 10.1016/j.watres.2021.117613
- J16. McClary-Gutierrez, J. S., Aanderud, Z. T., Al-Faliti, M., Duvallet, C., Gonzalez, R., Guzman, J., Holm, R., Jahne, M., Kanor, R., Katsivelis, P., Kuhn, K., Langan, L., Mansfeldt, C., McLellan, S., Grijalva, L., Murnane, K., Naughton, C., Pakman, A., Paraskevopoulos, S., Radniecki, T., Roman, F., Shrestha, A., Stadler, L., Steele, J., Swalla, B., Vikesland, P., Wartell, B., Wilusz, C., Wong, J., Boehm, A., Halden, R., Bibby, K., & Vela, J. D. **2021.** Standardizing data reporting in the research community to enhance the utility of open data for SARS-CoV-2 wastewater surveillance. *Environmental Science: Water Research & Technology*, 7(9), 1545-1551. DOI: 10.1039/D1EW00235J
- J15. Mansfeldt, C., Deiner, K., Mächler, E., Fenner, K., Eggen, R., Schönenberger, U., Johnson, D., Walser, J., and Altermatt, F. **2020.** Bacterial community shifts in streams receiving treated wastewater effluent. *Science of the Total Environment*. 709, p.135727. DOI:10.1016/j.scitotenv.2019.135727
- J14. Achermann, S., Mansfeldt, C., Johnson, D., and Fenner K. **2019.** Relating metatranscriptomic profiles to the micropollutant biotransformation potential of complex microbial communities. *Environmental Science & Technology*. 54.1: 235-244. DOI:10.1021/acs.est.9b05421
- J13. Mansfeldt, C., Achermann, S., Men, Y., Walser, J., Villez, K., Joss, A., Johnson, D., and Fenner, K. **2019.** Microbial residence time is a controlling parameter of the taxonomic and functional-enzyme composition of microbial communities. *ISMEJ*. 13(6), 1589. DOI: 10.1038/s41396-019-0371-6
- J10. Heavner, G., Mansfeldt, C., Wilkins, M., Nicora, C., Debs, G., Edwards, E., & Richardson, R. **2019.** Detection of organohalide-respiring enzyme biomarkers at a bioaugmented TCE-contaminated field site. *Frontiers in Microbiology*, 10. DOI: 10.3389/fmicb.2019.01433
- J12. Achermann, S., Falås, P., Joss, A., Mansfeldt, C., Men, Y., Vogler, B., & Fenner, K. **2018.** Trends in micropollutant biotransformation along a solids retention time gradient. *Environmental Science & Technology*. 52(20):11601–11611. DOI:10.1021/acs.est.8b02763
- J11. Achermann, S., Bianco, V., Mansfeldt, C., Vogler, B., Kolvenbach, B., Corvini, P., & Fenner, K. **2018.** Biotransformation of sulfonamide antibiotics in activated sludge: The formation of pterin-conjugates leads to sustained risk. *Environmental Science & Technology*, 52(11):6265-6274. DOI:10.1021/acs.est.7b06716
- J10. Heavner, G., Mansfeldt, C., Debs, G., Hellerstedt, S., Rowe, A., & Richardson, R. **2018.** Biomarkers' responses to reductive dechlorination rates and oxygen stress in bioaugmentation culture KB-1<sup>TM</sup>. *Microorganisms*, 6(1):13. DOI:10.3390/microorganisms6010013
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(12):6854–6863. DOI:10.1021/acs.est.7b06581.

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- J7. Mansfeldt, C., Heavner, G., Rowe, A., Hayete, B., Church, B., & Richardson, R. **2016**. Inferring gene networks for strains of *Dehalococcoides* highlights conserved relationships between genes encoding core catabolic and cell-wall structural proteins. *PloS One*, 11(11). DOI:10.1371/journal.pone.0166234
- J6. Mansfeldt, C., Logsdon, B., Debs, G., & Richardson, R. **2015**. SPINE: SParse eIggene NETwork linking gene expression clusters in *Dehalococcoides mccartyi* to perturbations in experimental conditions. *PloS One*, 10(2). DOI:10.1371/journal.pone.0118404.
- J5. Rowe, A., Mansfeldt, C., Heavner, G., & Richardson, R. **2015**. Relating mRNA and protein biomarker levels in a *Dehalococcoides* and *Methanospirillum*-containing community. *Applied Microbiology and Biotechnology*, 99(5): 2313-2327. DOI:10.1007/s00253-014-6220-7.
- J4. Mansfeldt, C., Rowe, A., Heavner, G., Zinder, S., & Richardson, R. **2014**. Meta-analyses of transcriptomic profiles of *Dehalococcoides mccartyi* strain 195 identify a respiration rate-related gene expression transition point and inter-operon recruitment of a key oxidoreductase subunit. *Applied & Environmental Microbiology*, 80(19):6062-6072. DOI:10.1128/AEM.02130-14.
- J3. Heavner, G., Rowe, A., Mansfeldt, C., Pan, J., Gossett, J., & Richardson, R. **2013**. Molecular biomarker- based biokinetic modeling of a PCE-dechlorinating and methanogenic mixed culture. *Environmental Science & Technology*, 47(8):3724-3733. DOI:10.1021/es303517s.
- J2. Rowe, A., Mansfeldt, C., Heavner, G., & Richardson, R. **2012**. *Methanospirillum* respiratory mRNA biomarkers correlate with hydrogenotrophic methanogenesis rate during growth and competition for hydrogen in an organochlorine-respiring mixed culture. *Environmental Science & Technology*, 47(1):372-381. DOI:10.1021/es303061y.
- J1. Rowe, A., Heavner, G., Mansfeldt, C., Werner, J., & Richardson, R. **2012**. Relating chloroethene respiration rates in *Dehalococcoides* to protein and mRNA biomarkers. *Environmental Science & Technology*, 46(17):9388-9397. DOI:10.1021/es300996c.

#### PRESENTATIONS: INVITED SPEAKER

- P22. Mansfeldt, C., Johnson, W., Bowden, M. *Uncertainties Surrounding the Risks of Ashes and Debris from Wildland-Urban Interface Wildfires to Water and Soil Quality*. Sept 15, **2023**. University of Colorado Boulder Wildland Urban Interface Wildfire Workshop. Boulder, Colorado.
- P21. Mansfeldt, C. *The Ethics of the Next Target: Learning Best Practices in Sustainable Wastewater-Testing in Support of Public Health*. Sept 1, **2023**. NSF RCN. Virtual.
- P20. Mansfeldt, C. *For the Love of Sewers: Preserving a definition of you through waste*. Feb 3, 2023. JSCBB Departmental Seminar, Boulder, Colorado.
- P19. Mansfeldt, C. *RCN Wastewater Ethics*. Panelist Member, June 13, 2023. NSF RCN, Virtual.
- P18. Mansfeldt, C. *Distracted by Disaster: Applying Principles of Environmental Microbiology and Chemistry to Push Beyond Hurried Response to Thoughtful Prevention*. Aug 11, **2022**. Department of Environmental Chemistry, Eawag, Dubendorf, Switzerland.

- C. Mansfeldt
- P17. Mansfeldt, C. *Deciphering Waste: The Management and Informative Power of Microbial and Chemical Wastewater Constituents*. Jan 14, **2022**. WESTalks (Online)
- P16. Mansfeldt, C. *Squishy Infrastructure: Balancing Risks and Rewards in the Built Environment Microbiome*. Oct 27, **2021**. Penn State Microbiome Seminar Series (In Person)
- P15. Mansfeldt, C. *Balancing the Utility of Wastewater Surveillance with the Ethics of Privacy*. Sept 10, **2021**. University of Colorado Boulder EVEN Friday Seminar Series
- P14. Mansfeldt, C. *Structuring EcoGenoRisk: Bioinformatic Mining of Expanding Genomic Databases to Predict Ecological Hazards and Risks*. July 28, **2021**. Environmental Protection Agency Novel Biotech Workshop.
- P13. Mansfeldt, C. *CUSew: On Campus Sewage Monitoring for SARS-CoV-2* May 12, **2021**. RCN NSF WBE Consortium Seminar Series
- P12. Mansfeldt, C. *Informative Rivers: Microbiomes in Sewers from Source to Release* April 22, **2021**. Microbiome Centers Consortium Seminar Series.
- P11. Mansfeldt, C. *The Medium is the Message : Managing the Information Content of Waste* March 2, **2021**. Arizona State University Environmental Engineering Seminar Series.
- P10. Mansfeldt, C. *Where do you end?* February 26, **2021**. American Water Resources Association Colorado Section (AWRA-CO)
- P9. Mansfeldt, C. *CUSew: Monitoring Campus Community Health Down the Drain*. December 15, **2020**. South Platte Coalition for Urban River Evaluation Joint Board/Monitoring Committee Meeting.
- P8. Mansfeldt, C., Bjorkman, K. *Detection: How can Dorm Wastewater Testing Complement Individual Monitoring?* November 20, **2020**. BioFrontiers Fall Meeting, University of Colorado Boulder.
- P7. Mansfeldt, C. *CUSew: Campus Sewer Monitoring for SARS-CoV-2*. November 20, **2020**. Front Range American Biological Safety Association Meeting.
- P6. Mansfeldt, C. *Campus Wastewater Monitoring Keeps COVID-19 in Check*. October 16, **2020**. Chancellor's Parent Leadership Society Board Meeting, University of Colorado Boulder.
- P5. Mansfeldt, C. *Life, On-Campus Wastewater Monitoring*. August 12, **2020**. CU Boulder COVID Research Solutions for Campus: Health assessment, surveillance and testing; University of Colorado Boulder
- P4. Mansfeldt, C. *Life, Death, and the Accidental Sponge : Activated Sludge in the 21st Century*. March 6, **2020**. Environmental Engineering Seminar, Colorado School of Mines.
- P3. Mansfeldt, C. *Learning from Ecology: Identifying the fate of trace organic contaminants in municipal activated sludge*. September 18, **2019**. CIRES Center of Microbial Exploration Seminar, University of Colorado Boulder.
- P2. Mansfeldt, C. *Manipulating and modelling the activated sludge microbial community to clarify the fate of trace organic contaminants*. March 26, **2019**. University of Newcastle
- P1. Mansfeldt, C., Achermann, S., Walser, J.C., Johnson, D., & Fenner, K. *The influence of the microbial residence time on the taxonomic and functional composition of microbial communities*. September 11, **2018**. ETH Zürich Genomics Diversity Center (GDC) Symposium

## PRESENTATIONS: CONFERENCES

### OP-oral, PP-poster

- OP17. Mansfeldt, C. *Sustainable Sewers: Exploring Environmental Surveillance Ethics at the Intersection of Wastewater Epidemiology, Reuse, and Sanitation*. Centers for Disease Control National Wastewater Surveillance System. Oct 26, 2023. Virtual

- OP16. Mansfeldt, C. *Structuring EcoGenoRisk : Bioinformatic Mining of Expanding Genomic Databases to Predict Ecological Hazards and Risks*. Environmental Protection Agency Novel Biotech Workshop. Sept 19, 2023. Virtual.
- OP15. Mansfeldt, C. *WUI Wildfire Impacts and Research Areas on Soil and Water Quality*. University of Colorado Boulder Fire Symposium. Sept 15, 2023. Boulder, CO.
- OP14. Mansfeldt, C., Ulanova, A. *Predicting the Risks Associated with Synthetic Biology to Wastewater*. Oral Presentation. Sept 10-14, 2023. IWA MEWE23. Brisbane, Australia.
- PP15. Bowden, M., Thurman, M., Ferrer, I., Mansfeldt., C., Rosario-Ortiz, F. *Quantification of Pyrogenic Organic Compounds in Surface Waters after the Cameron Peak Fire*. Poster Presentation. August 6-11, **2023**. IHSS, Santiago, Chile.
- PP14. Maybruck, V., Mansfeldt, C. *Managing Pharmaceutical Contaminants: Tracking Pharmaceuticals from Prescription to Wastewater*. Poster Presentation. June 12-13, **2023**. Computational and Systems Biology Annual Symposium. Colorado State University, Fort Collins, Colorado.
- OP13. Mansfeldt, C., *Burn After Reading: The Increasing Need for Uniting Surveillance with Treatment in Wastewater Management*. Oral Presentation. June 19-23, **2023**. AEESP Conference, Boston, Massachusetts.
- OP12. Johnson, W., Mansfeldt, C. *Microbial Community Interactions with Wildland-Urban Interface Fire Contamination in Aquatic Systems*. Oral Presentation. June 19-23, **2023**. AEESP Conference, Boston, Massachusetts.
- OP11. Bowden, M., Thurman, M., Ferrer, I., Rosario-Ortiz, F., Mansfeldt, C. *Quantification of Pyrogenic Organic Compounds in Surface Waters after Fires at the Wildland-Urban Interface*. Oral Presentation. June 19-23, **2023**. AEESP Conference, Boston, Massachusetts.
- OP10. Mansfeldt, C. *Community in the Community: Ethics Allies Above Answers in Wastewater-Based Surveillance*. Invited Oral Presentation. June 15-18, 2023. American Society of Microbiology Conference, Houston, Texas.
- OP9. Johnson, W., Mansfeldt, C. *Investigating the Effects of Wastewater Microbes on Nitrogen Cycling in Streams and Rivers*. Oral Presentation. September 18-21, **2022**. Rocky Mountain Water Conference, Keystone, Colorado.
- PP14. Mansfeldt, C., Ulanova, A. *Thermodynamically comparing the metabolic pathways encoded by metagenomes*. August 14-20, **2022**. ISME Conference, Lausanne, Switzerland.
- PP13. Mansfeldt, C. *Early Career Spotlight*. Poster Presentation. June 28-30, **2022**. AEESP Conference, St. Louis, Missouri.
- PP12. Ulanova, A., Mansfeldt, C. *Computational Tools for Synthetic Organism Risk Assessment: HazID*. Poster Presentation. June 28-30, **2022**. AEESP Conference, St. Louis, Missouri.
- PP11. Johnson, W., Reeves, K., Mansfeldt, C. *Lessons Learned from Building-Scale Wastewater Monitoring at the University of Colorado Boulder*. Poster Presentation. June 28-30, **2022**. AEESP Conference, St. Louis, Missouri.
- PP10. Mansfeldt, C., Ulanova, A. *Insurance Against Everything Being Everywhere: Managing and Monitoring Microbiomes Susceptible to Invasion*. Poster Presentation. June 19-24, **2022**. Gordon Research Conference: Microbiome of the Built Environment, Waterville Valley, New Hampshire.
- PP9. Mansfeldt, C. *Database-driven microbial risk and benefit analyses*. Rapid-Fire Oral Presentation and Poster Presentation. April 15, **2022**. Front Range Microbiome Symposium. Fort Collins, Colorado.
- OP8. Mansfeldt, C. *Applying Established Frameworks for Surveillance Ethics to Wastewater Monitoring Campaigns*. Oral Presentation. Mar 23 **2022**. WEF Public Health and Water Conference – Disease Surveillance Summit, Cincinnati, Ohio.
- OP7. Reeves, K., Mansfeldt, C. *Mitigating COVID-19 Spread through Wastewater*

- Surveillance*. RMSAWWA/RMWEA Student Conference. Oral Presentation. May 17, 2021. Virtual.
- OP6. Mansfeldt, C. *CUSew: Campus Sewer Monitoring for SARS-CoV-2*. Oral Presentation. Jan 8 2021. TheSTATConference, Denver, Colorado.
- OP5. Cresten Mansfeldt, Katelyn Reeves, William Johnson *Widespread vs Sporadic: Sewage Patterns of Viruses* November 3, 2021 RCN Fall Meeting
- OP4. Mansfeldt, C., Fermini, M., Vogler, B., & Fenner, K. *Entwined factors: the influence of ammonia on protozoa's interaction with trace organic contaminants*. Oral Presentation. April 28 – May 3 2019. TransCon2019, Ascona, Switzerland.
- PP8. Mansfeldt, C., Achermann, S., Walser, J.C., Johnson, D., & Fenner, K. *The influence of the mean-cell residence time on community composition and micropollutant biotransformation*. Poster Presentation. June 23-29, 2018. Gordon Research Conference and Seminar: Environmental Sciences – Water. Holderness, New Hampshire, United States of America.
- OP3. Mansfeldt, C., Achermann, S., Vogler, B., Bianco, V., & Fenner, K. *Sulfonamide biotransformation: Transformation product elucidation and linked gene-transcript identification*. Oral Presentation. September 17-20, 2017. Micropol2017, Vienna, Austria.
- PP7. Mansfeldt, C., Achermann, S., Udert, K., Vogler, B., Joss, A., & Fenner, K. *Micropollutant profiles and biotransformation capabilities of aerobic reactors treating domestic urine*. Poster Presentation. March 7-8, 2017. ATHENE Workshop, Koblenz, Germany.
- PP6. Mansfeldt, C., Achermann, S., Udert, K., Kipf, M., Latino, D., Joss, A., & Fenner, K. *Linking the bacterial community succession in an aerobic reactor treating urine to the time-varying biotransformation of micropollutants*. Poster Presentation. August 21-26, 2016. International Society of Microbial Ecology – ISME16, Montreal, Canada.
- PP5. Mansfeldt, C., Heavner, G., Rowe, A., & Richardson, R. *Stress Responses Detected in the Transcriptomes and Proteomes of Dehalococcoides mccartyi strains*. Poster Presentation. May 17-20, 2014. American Society of Microbiology General Meeting. Boston, Massachusetts, United States of America.
- PP4. Mansfeldt, C., & Richardson, R. *The Art and Comics of Environmental Engineering*. Poster Presentation. July 14-16, 2013. Association of Environmental Engineering and Science Professors National Meeting. Golden, Colorado, United States of America.
- PP3. Mansfeldt, C., Heavner, G., Rowe, A., Richardson, R., Church, B., & Hayette, H. *Modeling gene interactions with experimental parameters for Dehalococcoides ethenogenes strain 195*. Poster Presentation. June 16-19, 2012. American Society of Microbiology General Meeting. San Francisco, California, USA.
- PP2. Mansfeldt, C., Richardson, R., Heavner, G., Rowe, A., Hug, L., Edwards, E., Church, B., & Hayette, H. *Comparing network reconstructions of two Dehalococcoides species in mixed culture*. Poster Presentation. June 16-19, 2012. American Society of Microbiology General Meeting. San Francisco, California, USA.
- OP2. Mansfeldt, C., Richardson, R. *Expression Trends for Reductive Dehalogenases: Elucidation of RNA Bioindicators of the Conversion of PCE, TCE, and DCE at Various Respiration Rates*. Oral Presentation, Oct. 5 2009, Contaminated Site Management Conference, Niagara Falls, NY, USA.
- PP1. Mansfeldt, C., Richardson, R. *Microarray Monitoring of a Mixed Community Containing Dehalococcoides ethenogenes strain 195*. Poster Presentation, May 2009, ASM National Meeting, Philadelphia, PA, USA.
- OP1. Mansfeldt, C., Bott, C., & Holbrook, R. *Behavior and removal of multiwalled carbon nanotubes during simulated drinking water treatment processes*. Oral Presentation. Mar 2007. American Chemical Society National Meeting. Chicago, IL, USA.