

Curriculum Vitae

Sarah E. Rothenberg, D.Env.
Assistant Professor
Oregon State University
School of Biological and Population Health Sciences
Environmental and Occupational Health Program
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1. Education

2000	B.S.	Applied Mathematics	University of California, Los Angeles
2002	M.S.	Statistics	University of California, Los Angeles
2007	D.Env.	Environmental Science & Engineering	University of California, Los Angeles

2. Postdoctoral Training

2007-2008	San Francisco Estuary Institute, Oakland, California
2008-2011	Institute of Geochemistry, Chinese Academy of Sciences, Guiyang, China, NSF International Research Fellowship Program (Grant 0802014 PI: Rothenberg)
2011	Department of Epidemiology and Health Promotion, College of Dentistry, New York University, NY, NY (NRSA, T32, PI: Katz)

3. Academic Appointments

2011-2017	Assistant Professor, University of South Carolina, Department of Environmental Health Sciences
2017-present	Assistant Professor, Oregon State University School of Biological and Population Health Sciences Environmental and Occupational Health Core Program

4. Federal/State Grants (since 2011)

Active:

(2020-2022)	Oregon Sea Grant: PBDEs/Methylmercury and Immune Function in Non-Stranded Male California Sea Lions (<i>Zalophus californianus</i>) (PI: Rothenberg)
2016-2020	NIEHS: Methylmercury Exposure Through Rice Ingestion, Gut Microbes, and Offspring Development (Award R21 ES026412) (PI: Rothenberg)

Completed:

2013-16	NIEHS: Maternal Methylmercury Exposure Through Rice Ingestion and Offspring Development (Award R15 ES022409) (PI: Rothenberg)
2012-15	USDA-AFRI The Effect of Aerobic and/or Intermittently Flooded Rice Cultivation on AQP Transcription Levels and the Nutritional Quality of Rice Grain (Award 2012-69002-19796) (PI: Rothenberg)

5. University of South Carolina (USC), Internal Funding, completed

2017	Office of the Provost, Visiting Scholars Award: Catalyzing new research partnerships to investigate environmental and community health impacts due to sanitary sewage overflows in Columbia, S.C. (PI: Rothenberg)
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- 2015-16 Office of Research: The Contribution of Gut Microbiota to Prenatal Methylmercury Exposure (**PI: Rothenberg**)
- 2015-16 Teaching Innovation Grant in Integrative Learning: Climate Change and Global Environmental Health (**PI: Rothenberg**)
- 2015-2016 Office of Research: Sewage Overflows from the 1000-Year Rain Event and their Impacts on the Cycling of Carbon and Toxic Metals in the Congaree River Watershed (**PI: Rothenberg**)

6. Federal Grants (postdoctoral)

- 2008-10 National Science Foundation, International Research Fellowship Program (Award 0802014) The influence of sulfur cycling on mercury methylation in rice paddies in the mining areas of Guizhou Province, China (**PI: Rothenberg**)

7. Awards for student advisees

- 2015 Anna Lynn (B.S., University of South Carolina, Honors College)
National Oceanic and Atmospheric Administration (NOAA) Ernest F. Hollings scholarship program, and the SULI National Laboratory internship program
- 2012 Chris Paget (MPH, University of South Carolina, Environmental Health Sciences)
National Science Foundation, East Asia and Pacific Summer Institute in Japan
Pharmaceutical biodegradation and attenuation by biofilms in aquatic systems

8. Publications in peer-reviewed journals (student advisees are underlined)

Rothenberg, S.E., Wagner, C.L., Hamidi, B., Alekseyenko, A.V., Azcarate-Peril, M.A. (2019). Longitudinal changes during pregnancy in gut microbiota and methylmercury biomarkers, and reversal of microbe-exposure correlations. *Environmental Research*. 172, 700-712. PMID: 30903970.

Loosli, F., Wang, J, **Rothenberg, S.**, Bizimis, M., Winkler, C., Borovinskaya, O., Flamigni, L., Baalousha, M. (2019). Sewage spills are a major source of titanium dioxide engineered (nano)- particle release into the environment. *Environmental Science: Nano*, 6, 763-777.

Emmons, A.M., Bizimis, M., Lang, S.Q., Stangler, W., Geidel G., Baalousha, M., Wanamaker, E., **Rothenberg, S.E.** (2018). Enrichments of metals, including methylmercury, in sewage spills in South Carolina, USA. *Journal of Environmental Quality*. 47, 1258-1266.

Donohue, A., Wagner, C.L., Burch, J.B., **Rothenberg, S.E.**, 2018. Blood total mercury and methylmercury among pregnant mothers in Charleston, South Carolina, USA. *Journal of Exposure Science and Environmental Epidemiology*. 28,494-504. PMID: 29670220.

Rothenberg, S.E., Jackson, B.P., McCalla, G.C., Donohue, A., Emmons, A.M. (2017). Co-exposure to methylmercury and inorganic arsenic in baby rice cereals and rice-containing teething biscuits. *Environmental Research*. 159, 639-647. PMID: 28938205 PMCID: PMC5661960.

Rothenberg, S.E., Yin, R., Hurley, J.P., Krabbenhoft, D.P., Ismawati, Y., Hong, C., Donohue, A. (2017). Stable mercury isotopes in polished rice (*Oryza sativa* L.) and hair from rice consumers. *Environmental Science and Technology*. 51, 6480-6488. PMID: 28482656 PMCID: PMC5464010.

Sen, I.S., Mitra, A., Peuker-Ehrenbrink, B., **Rothenberg, S.E.**, Tripathi S.N., Debajyoti, P., Bizimis, M. (2016). Emerging airborne contaminants in India: platinum group elements from catalytic converters in motor vehicles. *Applied Geochemistry*. 75, 100-106.

Rothenberg, S.E., Anders, M., Ajami, N., Petrosino, J.F., Balogh, E. (2016). Water management impacts rice methylmercury and the soil microbiome. *Science of the Total Environment*. 572, 608-617. PMID: 27450246 PMCID: PMC5099098.

Rothenberg, S.E., Yu, X., Liu, J., Biasini, F.J., Hong, C., Jiang, X., Nong, Y., Yue, C., Korrick, S.A. (2016). Maternal methylmercury exposure through rice ingestion and offspring neurodevelopment: A prospective cohort study. *International Journal of Hygiene and Environmental Health*, 219, 832-842. PMID: 27503636 PMCID: PMC5086436

Hong, C., Yu, X., Liu, J., Cheng, Y., **Rothenberg, S.E.** (2016). Low-level methylmercury exposure through rice ingestion in a cohort of pregnant mothers in rural China. *Environmental Research*. 150, 519-527. PMID: 27423706 PMCID: PMC5003649

Drevnick, P.E., Cooke, C.A., Barraza, D., Blais, J.M., Coale, K.H., Cumming, B.F., Curtis, C.J., Das, B., Donahue, W.F., Eagles-Smith, C.A., Engstrom, D.R., Fitzgerald, W.F., Furl, C.V., Gray, J.E., Hall, R.I., Jackson, T.A., Laird, K.R., Lockhart, W.L., Macdonald, R.W., Mast, M.A., Mathieu, C., Muir, D.C.G., Outridge, P.M., Reinemann, S.A., **Rothenberg, S.E.**, Ruiz-Fernández, A.C., St. Louis, V.L., Sanders, R.D., Sanei, H., Skierszkan, E.K., Van Metre, P.C., Veverica, T.J., Wiklund, J.A. 2016. Spatiotemporal patterns of mercury accumulation in lake sediments of western North America. *Science of the Total Environment*. 568, 1157-1170. PMID: 27102272.

Rothenberg, S.E., Keiser, S., Ajami, N.J., Wong, M.C., Gessell, J., Petrosino, J.F., Johs, A., (2016). The role of gut microbiota in fetal methylmercury exposure: insights from a pilot study. *Toxicology Letters* 242, 60-67. PMID: 26626101 PMCID: PMC4707065

Rothenberg, S.E., Korrick, S.A., Fayad, R., (2015). The influence of obesity on blood mercury levels for U.S. non-pregnant adults and children: NHANES 2007-2010. *Environmental Research*. 138, 173-180. PMID: 25721244 PMCID: PMC4385493

Rothenberg, S.E., Mgutshini, N.L., Bizimis, M., Johnson-Beebout, S.E., Ramanantsoanirina, A., (2015). Retrospective study of methylmercury and other metal(loid)s in Madagascar unpolished rice (*Oryza sativa* L.). *Environmental Pollution*. 196, 1-9. PMID: 25463705 PMCID: PMC4352114

Rothenberg, S.E., Windham-Myers, L., Creswell, J.E. (2014). Rice methylmercury exposure and mitigation: a comprehensive review. *Environmental Research*. 133, 407-423. PMID: 24972509 PMCID: PMC4119557

Rothenberg, S.E., Yu, X., Zhang, Y., (2013). Prenatal methylmercury exposure through maternal rice ingestion: Insights from a feasibility pilot in Guizhou Province, China. *Environmental Pollution*. 180, 1-8. PMID: 23800416

Rothenberg, S.E., Feng, X., Zhou W., Tu, M., Jin, B., You, J. (2012). Environment and genotype controls on mercury accumulation in rice (*Oryza sativa* L.) cultivated along a contamination gradient in Guizhou, China. *Science of the Total Environment*, 426, 272-280.

Rothenberg, S.E., Feng, X (2012). Mercury cycling in a flooded rice paddy. *Journal of Geophysical Research- Biogeosciences*. Vol. 117, G03003, doi:10.1029/2011JG001800.

Rothenberg, S.E., Feng, X., Dong, B., Shang, L., Yin, R. Yuan, X., (2011). Characterization of mercury species in brown and white rice (*Oryza sativa* L.) grown in water-saving paddies. *Environmental Pollution*, 159, 1283-1289.

Rothenberg, S.E., Feng, X., Li, P. (2011). Low-level maternal methylmercury exposure through rice ingestion and potential implications for offspring health. *Environmental Pollution*, 159, 1017-1012.

Rothenberg, S.E., McKee, L., Gilbreath, A., Yee, D., Connor, M., Fu, X., (2010c), Evidence for short-range transport of atmospheric mercury to a rural, inland site. *Atmospheric Environment*, 44, 1263-1273.

Rothenberg, S.E., McKee, L., Gilbreath, A., Yee, D., Connor, M., Fu, X., (2010), Wet deposition of mercury within the vicinity of a cement plant before and during cement plant maintenance. *Atmospheric Environment*, 44, 1255-1262.

Rothenberg, S.E., Kirby, M.E., Bird, B.W., DeRose, M.B., Lin, C-C., Feng, X., Ambrose, R.F., Jay, J.A., (2010). The impact of over 100 years of wildfires on mercury levels and accumulation rates in two lakes in southern California, USA. *Environmental Earth Sciences* 60, 993-1005.

Fu, X., Feng, X., Zhu, W., **Rothenberg, S.**, Yao, H., Zhang, H. (2010). Elevated atmospheric deposition and dynamics of mercury in a remote upland forest of southwestern China. *Environmental Pollution*, 158, 2324-2333.

Zhang H., Feng, X, Larssen T., Shang, L., Li, P., **Rothenberg, S.E.**, Lin, Y., Zhang, H., Vogt, R.D., (2010). Fractionation, distribution and transport of mercury in rivers and tributaries around Wanshan Hg mining district, Guizhou Province, southwestern China Part 1: Total mercury. *Applied Geochemistry*, 25, 633-641.

Fu, X.W., Feng, X.B., Wang, S.F., **Rothenberg, S.**, Shang, L.H., Li, Z.G., Qiu, G.L. (2009). Temporal and spatial distributions of total gaseous mercury concentrations in ambient air in a mountainous area in southwestern China: implications for industrial and domestic mercury emissions in remote areas in China. *Science of the Total Environment* 407, 2306-2314.

Rothenberg, S.E., Ambrose, R.F., Jay, J.A., (2008b). Evaluating the potential efficacy of mercury total maximum daily loads on aqueous methylmercury levels in four coastal watersheds. *Environmental Science and Technology* 42, 5400-5406.

Rothenberg, S.E., Ambrose, R.F., Jay, J.A., (2008a). Mercury cycling in surface water, pore water and sediments of Mugu Lagoon, CA., USA. *Environmental Pollution* 154, 32-45.

Rothenberg, S.E., Du, X., Zhu, Y.-G., Jay, J.A., (2007). The impact of sewage irrigation on the uptake of mercury in corn plants (*Zea mays*) in suburban Beijing. *Environmental Pollution* 149, 246-251.

Marcotullio, P.J., **Rothenberg, S.**, Nakahara, M., (2003). Globalization and urban environmental transitions: comparison of New York's and Tokyo's experiences. *The Annals of Regional Science*, 37, 369-390.

9. Thesis Advisor

Oregon State University

2018 Neville, M. West Nile surveillance in Linn County (Environmental and Occupational Health, MPH, Committee Chair)

- 2019 Cocks, M. Domestic well safety in Benton County, OR (Environmental and Occupational Health, MPH, Committee Member)
- 2019 Fitch, S., Safety and health achievement recognition program (SHARP) assessment at the City of Eugene Public Works Department (Environmental and Occupational Health, MPH, Committee Member)
- (2020) Munro, T. (Environmental and Occupational Health, MPH, Committee Chair)
- (2020) Kruearat, P. (Environmental and Occupational Health, MPH, Committee Chair)
- (2022) Andrews, F. (Environmental and Occupational Health, Ph.D., Committee Member)
- (2023) Asseko, S. (Environmental and Occupational Health, Ph.D., Committee Member)

University of South Carolina

- 2013 Antle, R. Tidal Flux of Transition Metals and Rare Earth Elements in a Barrier Island Salt Marsh (Earth and Ocean Sciences, M.S., Committee Member)
- 2014 Heidari, L. Developing a Sustainable After-School Gardening Program that Emphasizes Nutrition and Environmental Education (Baccalaureus Artium et Scientiae in Environmental Health (BArt et Scien) Honors College, Committee Member)
- 2014 Adelui, A. The Rocky Branch Watershed: Evidence for Mercury Pollution (Environmental Health Sciences, M.P.H., Committee Chair)
- 2015 Ntihabose, R. Evaluation Des Biomarqueurs D'Exposition Au Manganese Chez Les Enfants Qui Boivent De L'Eau Des Puits Au Nouveau-Brunswick. (M.S. Department of Chemistry and Biochemistry, Universite de Moncton, Canada, External Reviewer)
- 2015 Jones, S. Uptake of Nanoparticles by *Vibrio Gazogenes*. (Environmental Health Sciences, M.S., Committee Member)
- 2017 Hong, C. Maternal Methylmercury Exposure Through Rice Ingestion and Offspring Development (Environmental Health Sciences, Ph.D., Committee Chair)
- 2017 Orekoya, B. Breastfeeding, Gestational Weight Gain, and Offspring Development in a Chinese Cohort. (Epidemiology and Biostatistics, Ph.D., Committee Member)
- 2017 Donohue, A. Does Vitamin D supplementation influence prenatal methylmercury exposure? (Environmental Health Sciences, M.S., Committee Chair)
- 2017 Emmons, M. The Impacts of the 1000-Rain Event on Sewage Outfalls and Metals Cycling (Master of Earth and Environmental Resource Management, M.S. Committee Chair)

10. Presentation Abstracts (since 2011)

Presenters are listed, and student and postdoctoral advisees are underlined.

Hoang, V.A.T. and Rothenberg, S.E. (2019) Total Mercury and Methylmercury Concentrations in Rice from Three Cities in Vietnam (Hanoi, Hue, and Ho Chi Minh City). Society for Environmental Toxicology and Chemistry (SETAC), Toronto, Canada

Rothenberg, S.E. (2019) Prenatal Co-Exposure to Methylmercury and Inorganic Arsenic. Society for Environmental Toxicology and Chemistry (SETAC), Toronto, Canada.

Rothenberg, S.E. (2018) Stable Mercury Isotopes in Polished Rice (*Oryza sativa* L.) and Hair from Rice Consumers. Rice Technical Workgroup, Long Beach, Ca.

Rothenberg, S.E. (2017) Maternal Methylmercury Exposure Through Rice Ingestion and Offspring Neurodevelopment: A Prospective Cohort Study. 13th International Conference on Mercury as a Global Pollutant (ICMGP), Providence, RI.

Emmons, M. (2017) The Impact of Sanitary Sewage Overflows on Surface Water Methylmercury and Other Metals, Following the 1000-Year Rain Event in Columbia, South Carolina, USA. 13th International Conference on Mercury as a Global Pollutant (ICMGP), Providence, RI.

Donohue, A. (2017) Speciation of Blood Mercury Among Pregnant Mothers in Charleston, South Carolina, USA. 13th International Conference on Mercury as a Global Pollutant (ICMGP), Providence, RI.

Rothenberg, S.E. (2016) Maternal Methylmercury Exposure Through Rice Ingestion and Offspring Neurodevelopment: A Prospective Cohort Study. U.S. National Institutes of Environmental Health Sciences (NIEHS)-Fest. Durham, N.C.

Rothenberg, S.E. (2016) Maternal Methylmercury Exposure Through Rice Ingestion and Offspring Neurodevelopment: A Prospective Cohort Study. 9th Conference on Metal Toxicity & Carcinogenesis, Lexington, KY.

Orekoya, O. (2016) Maternal gestational weight gain and offspring's weight at 1 year of age in rural Guangxi province, China: the mediating role of birth weight. Society for Epidemiologic Research (SER), Miami, Florida.

Hong, C. (2015) Maternal Methylmercury Exposure Through Rice Ingestion in Rural China. Society for Environmental Toxicology and Chemistry (SETAC), Salt Lake City, Utah.

Rothenberg, S.E. (2015) The Role of Gut Microbiota in Fetal Methylmercury Exposure: Insights from a Pilot Study. Society for Environmental Toxicology and Chemistry (SETAC), Salt Lake City, Utah.

Rothenberg, S.E. (2015) The Influence of Water Management on Arsenic Uptake in Rice Grain and Aquaporin Expression in Rice Roots. Society for Environmental Toxicology and Chemistry (SETAC), Salt Lake City, Utah.

Hong, C. (2014) Maternal Methylmercury Exposure Through Rice Ingestion and Offspring Development: Preliminary Results, Int'l Society for Environmental Epidemiology (ISEE), Seattle, WA.

Rothenberg, S.E. (2014) The Influence of Gut Microbiota on the Speciation and Toxicity of Mercury during Pregnancy: Results from a Feasibility Pilot, Int'l Society for Environmental Epidemiology (ISEE), Seattle, WA.

Rothenberg, S.E. (2014) The Influence of Obesity on Blood Mercury Levels: NHANES (2007-2010) Int'l Society for Environmental Epidemiology (ISEE), Seattle, WA.

Baker, L.M. and Rothenberg, S.E. (2013) The Effect of AWD on AQP Transcriptional Abundance in Rice Plants and the Nutritional Quality of Rice Grain, International Conference on the Biogeochemistry of Trace Elements, Athens, GA.

Rothenberg, S.E. (2013) Rice and Mercury: Biogeochemistry and Implications for Human Health, 11th International Conference on Mercury as a Global Pollutant (ICMGP), Edinburgh, UK

Rothenberg, S.E. (2013) Hg Species & Other Trace Elements (As, Se, Mn, Cu, Zn, Cd & Rb) in Madagascar Rice, 11th International Conference on Mercury as a Global Pollutant (ICMGP), Edinburgh, UK.

Rothenberg, S.E. (2012) Methylmercury Accumulation in Rice Grain (*Oryza sativa* L.): Environment and Genotype Controls, International Conference on Heavy Metals in the Environment (ICHMET), Rome, Italy.

Rothenberg, S.E. (2012) Maternal Methylmercury Exposure Through Rice Ingestion and Offspring Development: Results from a Feasibility Pilot, International Society of Environmental Epidemiologists (ISEE), Columbia, SC.

Rothenberg, S.E. (2011) Mercury species in rice grain grown along a contamination gradient in Guizhou province, China. 10th International Conference on Mercury as a Global Pollutant (ICMGP), Halifax, Nova Scotia, Canada.

Rothenberg, S.E. (2011) Mercury cycling in a flooded rice paddy. 10th International Conference on Mercury as a Global Pollutant (ICMGP), Halifax, Nova Scotia, Canada.

Rothenberg, S.E. (2011) The UNEP Toolkit: Concerns about Over-Estimation of Environment Hg Releases Due to Dental Amalgam Use. 10th International Conference on Mercury as a Global Pollutant (ICMGP), Halifax, Nova Scotia, Canada

11. Academic Service (since 2011)

Conference Chair

2017 International Conference on Mercury as a Global Pollutant (ICMGP), Providence, RI, Rice and Mercury, Session Chair

2011 International Conference of Mercury as a Global Pollutant (ICMGP), Halifax, Canada, Special Session S20, Mercury Research in Developing Countries, Session Chair

Grant reviewer, ad-hoc

2019 NIH Study Sections (multiple)

2018 NIH Study Section

2017 NIH Study Section

2017 NSF, Geobiology and Low Temperature Geochemistry Division

2016 NIH Study Section

2015 NSF, Atmospheric Chemistry Division

Manuscript reviewer, ad-hoc (89 manuscripts reviewed since 2011):

Biological Trace Element Research, Canadian Journal of Fisheries and Aquatic Science, Chemosphere, Environmental & Experimental Botany, Ecotoxicology & Environmental Safety, Environment International, Environmental Geochemistry, Environmental Health Perspectives, Environmental Monitoring and Assessment, Environmental Pollution, Environmental Research, Environment Science: Processes and Impacts, Environmental Science & Technology, International Journal of Hygiene and Environmental Health, Journal of Environmental Quality, Journal of Exposure Science & Environmental Epidemiology (JESEE), Journal of Geophysical Research-Biogeosciences (AGU), Journal of Great Lakes Research, Journal of Toxicology & Environmental Health, Libertas Academica, Marine Chemistry, Neurotoxicology, Neurotoxicology & Teratology, Phytoremediation, Plos One, Science of the Total Environment, Scientific Reports, Toxicological Sciences, Water Air & Soil Pollution, Water Environment Research