Spencer J. Washburn

Postdoctoral Researcher
Smithsonian Environmental Research Center
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Education

The University of Michigan, Ann Arbor, Michigan **May 2018**
PhD in Earth and Environmental Sciences
Adviser: Joel Blum, Professor Earth and Environmental Sciences Department
Dissertation Title "Mercury Stable Isotopes as Tracers in Environmental Systems: Applications to Aquatic and Natural Gas Systems"
Dissertation Committee Members: Joel Blum (Chair), Allen Burton, Rose Cory, Kyger Lohmann

University of Chicago, Chicago, Illinois **June 2013**
BS in Environmental Science, with Honors
BA in Chemistry
Senior Thesis Topic: Stable Carbon Isotope Discrimination of Water Regimes in Rice Grains and Implications for the Reconstruction of Past Agricultural Practices

Professional Appointments

Postdoctoral Researcher, Smithsonian Environmental Research Center **2018-present**
Research Focus: Development of an Equilibrium Passive Sampler Predictive of MeHg Porewater Concentrations

Teaching Experience

Department of Earth and Environmental Sciences Camp Davis Rocky Mountain Field Station, The University of Michigan, Jackson, Wyoming
Graduate Student Instructor, "Ecosystem Science in the Rockies" July 2016 – August 2016 & July 2015 – August 2015

Department of Earth and Environmental Sciences, The University of Michigan, Ann Arbor, Michigan
Graduate Student Instructor, August 2016 – December 2016 &August 2013 – December 2013

Accepted Publications (peer-reviewed)

Washburn, S.J., Blum, J.D., Donovan, P.M., Singer, M.D. Isotopic Evidence for Mercury Photoreduction and Retention on Particles in Surface Waters of Central California, USA. *Science of the Total Environment.* **2019.** DOI: 10.1016/j.scitotenv.2019.04.145

Meyer, K.W., Petersen, S.V., Lohmann, K.C., Blum, J.D., **Washburn, S.J.**, Johnson, M.W., Gleason, J.D., Kurz, A.Y., Winkelstern, I.Z. Biogenic Carbonate Mercury and Marine Temperature Records Reveal Global Influence of Late Cretaceous Deccan Traps. *Nature Communications*. **2019.** *Just Accepted*.

Sanders, J.P., McBurney, A., Gilmour, C.C., Schwartz, G. E., **Washburn, S.J.**, Kane Driscoll, S.D., Brown, S.S., Ghosh, U. Development of a novel equilibrium passive sampling device for methylmercury in sediment and soil porewaters. *Environmental Toxicology and Chemistry*. **2019.** *Just Accepted*. DOI: 10.1002/etc.4631

Motta Medina, L., Blum, J.D., Johnson, M.J., Umhau, B., Popp, B.N., **Washburn, S.J.**, Drazen, J., Benitez-Nelson, C., Hannides, C., Close, H., Lamborg, C. Mercury Cycling in the North Pacific Subtropical Gyre as Revealed by Mercury Stable Isotope Ratios. *Global Biogeochemical Cycles*. **2019.** DOI: 10.1029/2018GB006057

Kurz, A.Y., Blum, J.D., **Washburn, S.J.**, Baskaran, M. Changes in the Mercury Isotopic Composition of Precipitation as Derived from Sediments in a Remote Alpine Lake in Wyoming, USA. *Science of the Total Environment.* **2019.** DOI: 10.1016/j.scitotenv.2019.03.165

Washburn, S.J., Blum, J.D., Kurz, A.Y., Pizzuto, J.E. Spatial and Temporal Variation in the Isotopic Composition of Mercury in the South River, Virginia. *Chemical Geology.* **2018**. DOI: 10.1016/j.chemgeo.2018.07.023

Washburn, S.J., Blum, J.D., Johnson, M.W., Tomes, J.M., Carnell, P.J. Isotopic Characterization of Mercury in Natural Gas via Analysis of Mercury Removal Unit Catalysts. *ACS Earth Space Chem.* **2018.** DOI: 10.1021/acsearthspacechem.7b00118

Washburn, S.J., Blum, J.D., Demers, J.D., Kurz, A.Y., Landis, R.C. Isotopic Characterization of Mercury Downstream of Historic Industrial Contamination in the South River, Virginia. *Environ. Sci. Technol.* **2017**. DOI: 10.1021/acs.est.7b02577

Manuscripts in Submission and Preparation

Washburn, S.J., Weiss-Penzias, P., Blum, J.D. Isotopic Composition of Hg in Fog Waters of Coastal California, USA. *In final preparation*.

Invited Lectures & Conference Presentations

Oral Presentations

Washburn, S.J. (April, **2019).** Using Stable Hg Isotopes to Elucidate Hg Biogeochemical Cycling in Two California Rivers. *Invited Seminar Lecture*. UC Santa Cruz, Department of Earth and Planetary Science.

Washburn, S.J., Blum, J.D., Kurz, A.Y. (July, **2017**). Identification of Two Isotopically Distinct Industrial Mercury End-Members in the South River, Virginia. The 13th International Conference on Mercury as a Global Pollutant, Providence, Rhode Island

Washburn, S.J., Blum, J.D., Demers, J.D., Landis, R.C. (June, **2015)** Isotopic Characterization of Mercury Downstream of Historic Industrial Contamination in the South River, Virginia. The 12th International Conference on Mercury as a Global Pollutant, Jeju, South Korea

Poster Presentations

Washburn, S.J., Blum, J.D., Donovan, P.M. (December, **2018**) Isotopic Evidence of Methylmercury Photoreduction Followed by Retention on Suspended Particles in Surface Waters of the Central CA Valley. Poster session at the American Geophysical Union 2018 Fall Meeting, Washington, D.C.

Washburn, S.J., Blum, J.D., Johnson, M.W., Tomes, J.M., Carnell, P.J. (July, **2017**) Isotopic Characterization of Mercury in Natural Gas via Analysis of Mercury Removal Unit Catalysts. Poster session at The 13th International Conference on Mercury as a Global Pollutant, Providence, Rhode Island

Awards & Service to Profession

2019 John Dorr Graduate Academic Achievement Award, Earth and Environmental Sciences Dept., University of Michigan

Research mentor to Jada Damon, MSc thesis project, expected graduation Spring **2021**.
Graduate Student mentor to Sara Leon, Senior Thesis project "Mercury Contamination of Channel Bed Sediment, South River, VA". **2018.**

Participant in Partnerships for Enhanced Engagement in Research (PEER) Program through USAID to provide laboratory instruction at SERC to Dr. Clavery Tangaraza of Sokoine University of Agriculture, Tanzania, in collaboration with Dr. Mark Cohen, NOAA.

Active Reviewer for *Environmental Science & Technology, Geochimica et Cosmochimica Acta, Geophysical Research Letters, GSA Bulletin, Analytical and Bioanalytical Chemistry, Limnology and Oceanography: Methods*, *Journal of Hazardous Materials*