

David W. Brew, Ph.D.
Toxicologist

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Education and Degrees Earned

- Ph.D. Environmental Health Science, The University of Georgia, 2019
- Bachelor's Degree in Applied Biotechnology, The University of Georgia, 2011

Experience Summary (Professional Career)

Paustenbach and Associates
Toxicologist
Jackson Hole, Wyoming Office
October 2019 – Present

- Consultant in toxicology, occupational health, industrial hygiene, risk assessment, state of the art, and safety.
- Currently focused on asbestos, airborne particles, silica, e-cigarettes (vaping), radionuclides, environmental toxicology (over a wide range of issues), and carbon monoxide poisoning.
- Involved in litigation work, interpreting toxicological studies, conducting exposure assessments, assessing mathematical models for dose-response curves, and characterizing risks posed by chemicals in the environment

Graduate Teaching Assistant
The University of Georgia; Athens, GA
January 2012 - December 2018

- Prior to and during the pursuit of a doctoral degree, taught 287 students in seven different courses
- Developed and taught a graduate-level course in knowledge of pedagogical approaches and available support systems for new teaching assistants

Peer-Reviewer of Proposed Government Regulatory Positions/Documents

2020: Reviewed EPA's new proposed Risk Assessment Guidelines for Chrysotile asbestos. 136 pages of comments were submitted on May 26, 2020 to the Environmental Protection Agency.

Key Projects (Partial List)

1. **Retained to evaluate exposures to beryllium in golf club manufacturing.** It was claimed that an employee who used a grinder in a golf club factory developed CBD. We were retained to evaluate the exposures and the probability that his disease, if accurately diagnosed, was due to these exposures (Winter of 2020).
2. **Asbestos in laboratory products (1950-2010). We were retained by lawyers representing a laboratory equipment manufacturer.** Claims had been made about unacceptable levels of exposure associated with using a tongs with asbestos sleeves, gauze pads containing chrysotile asbestos, asbestos containing gloves, and other equipment. We were retained to conduct a dose reconstruction analysis to evaluate the validity of these claims (Winter of 2020).
3. **NDMA in pharmaceuticals.** Was contacted by a manufacturer who was receiving claims that their product contained trace concentrations of nitrosamines. This is an issue that has been raised in the 1970s and 1980s, when our team gave advice to FDA on how to set acceptable contaminant levels for over the counter and prescription drugs (Winter of 2020).
4. **Evaluated the risk of an asbestos related disease due to fiber drift at a shipyard.** Lawyers for the plaintiffs claimed that persons who worked very far away from a work area were overexposed. In this case, the sailor was allegedly exposed outside a ship within 200 yards of an exhaust duct (Summer of 2020).
5. **Respirators and their limitations for protecting workers.** We were retained by a major manufacturer who sold disposable (sometimes single use) respirators intended to protect workers from various dusts. The claim was that they often did not provide a protection factor of 5 or 10 and, as a result, did not always adequately protect persons who worked near asbestos in the 1970s and 1980s. (Fall of 2020)
6. **Evaluation of the possibility of developing a hypersensitivity pneumonitis as a result of exposure to food flavorings while working in a Chinese or Vietnamese restaurant.** Due to the interest in alleged hazards due to exposure to diacetyl in consumer products (like popcorn), there were a number of cases filed in the restaurant industry regarding exposure to many different types of flavoring (Fall of 2019 - Spring of 2020).

- 7. Assessment of the potential adverse effects of vaping products containing nicotine and various flavorings.** In light of the national concerns about whether E-cigarettes are a public health problem or a benefit to those who are trying to quit smoking (or both), this project presented a classic opportunity for conducting a health risk assessment (Winter of 2019 - Winter of 2021).
- 8. Assessment of soil samples at a former Naval site.** Reviewed all the available information and assembled a scope of work to conduct a sensitivity analysis and risk assessment (Summer of 2019-Winter of 2020)
- 9. Evaluation of claims that pigeon droppings caused chemical hypersensitivity pneumonitis (HP).** It was alleged that an employee of a railroad developed a potentially fatal fibrotic lung disease, due to occasional, outdoor, workplace exposure. An analysis of all published and case-specific material indicated that airborne exposure was not causal (Fall 2019).
- 10. Assessment of hazards posed by replacing asbestos carburetor gaskets.** Was retained by a firm to evaluate the possible hazards to consumers replacing asbestos gaskets on carburetors on their personal automobiles (Fall 2019).
- 11. Reviewed the toxicity of aluminum in potable water for an RV manufacturer.** Reviewed available literature on aluminum leaching and possible toxicity to consumers from potable water tanks. Found that there was a negligible risk to consumers from their product (Fall 2019).
- 12. Assessment of hazards posed by carbon dioxide poisoning from keyless automobiles.** We were retained to evaluate the potential liability due to two citizens being poisoned by exposure to carbon monoxide from a keyless car (Fall 2019).
- 13. Assessment of the hazards of asbestos-containing duct sealer.** Was retained by a firm to evaluate the possible hazards to workers applying, and later attempting to remove, a polymer-based duct sealer (Fall 2019).

PUBLICATIONS

Peer Reviewed Publications

1. **David Brew**, Marsha C. Black, Marina Santos, Jackson Rodgers, and W. Matthew Henderson. 2019. Metabolomic Investigations of the Temporal Effects of Exposure to Pharmaceuticals and Personal Care Products and their Mixture in the Eastern Oyster (*Crassostrea virginica*). Accepted to *Environmental Toxicology & Chemistry* October 2019

2. **David Brew**, Marsha C. Black, Madison Frazier, Rosemary Pearson-Clarke, Marina Santos, Jackson Rodgers, and W. Matthew Henderson. 2019. Biomonitoring of Pharmaceuticals and Personal Care Products using Wild Eastern Oysters (*Crassostrea virginica*) in Georgia, USA Estuaries. To be submitted to *Environmental Toxicology and Chemistry*.
3. **David Brew**, Marsha C. Black, Madison Frazier, Rosemary Pearson-Clarke, Marina Santos, Jackson Rodgers, and W. Matthew Henderson. 2019. Environmental metabolomics for in situ monitoring of eastern oysters (*Crassostrea virginica*) Affected by Stressors from Point and Nonpoint Sources Along Coastal Georgia, USA. To be submitted to *Environmental Toxicology and Chemistry*.
4. Anthony Wright, Deb McGrath, Franklin Leach, **David Brew**, W. Matthew Henderson, and Marsha C. Black. 2019. Sorption of Select Pharmaceuticals and Personal Care Products from Wastewater onto Natural Sediments. To be submitted to *Environmental Toxicology and Chemistry*.

Non-Peer Reviewed Publications

1. Dennis Paustenbach and David Brew. Speculation v. Fact: The Dangers of the Proposed EPA Risk Assessment on Chrysotile Asbestos. Asbestos Columns. HarrisMartin. February 2021.

Book Chapters

1. **Brew D.W.** and T. Slavin. 2020. Chapter 116: Silica and Silica Compounds. In: Farland, B., Klaunig, J.E., Levy, L., Helmut, G., Becker, R., and D. Paustenbach (eds.), *Patty's Toxicology*. Seventh edition. Wiley & Sons, New York. *In preparation*.
2. **Brew D.W.** and L. Levy. 2020. Chapter 25: Occupational Exposure Limits. In: Farland, B., Klaunig, J.E., Levy, L., Helmut, G., Becker, R., and D. Paustenbach (eds.), *Patty's Toxicology*. Seventh edition. Wiley & Sons, New York. *In preparation*.

Presentations at Scientific Conferences

1. 2020. (December). Paustenbach's Thoughts on the State of the Risk Analysis Field. Society for Risk Analysis. December 17, 2020. Platform Presentation.

2. 2020. (December). Comments Regarding the EPA's Draft Risk Evaluation for Asbestos. International Society of Regulatory Toxicology and Pharmacology. December 2, 2020. Platform Presentation.
3. 2018. (November). Environmental Metabolomics for *In Situ* Monitoring of Eastern Oysters (*Crassostrea virginica*) Affected by Stressors from Point and Nonpoint Sources Along Coastal Georgia, USA. Society of Environmental Toxicology and Chemistry 39th Annual Meeting. November 4th - 8th, 2018. Sacramento, California, USA. Poster presentation.
4. 2017. (November). Metabolomic Investigations of the Temporal Effects of Exposure to Pharmaceuticals and Personal Care Products and their Mixture in the Eastern Oyster (*Crassostrea virginica*). Society of Environmental Toxicology and Chemistry 38th Annual Meeting. November 12th - 16th, 2017. Minneapolis, Minnesota, USA. Platform presentation.
5. 2017. (March). Occurrence and Ecological Risk of Pharmaceuticals and Personal Care Products in Two Georgia, USA Estuaries. 3rd International Conference on Environmental Pollution, Restoration and Management. March 6th - 10th, 2017. Quy Nhon, Vietnam. Platform presentation.
6. 2016. (November). Untargeted Metabolomic Investigations of the Eastern Oyster (*Crassostrea virginica*) Exposed to Pharmaceuticals and Personal Care Products. Society of Environmental Toxicology and Chemistry 37th Annual Meeting. November 6th - 10th, 2016. Orlando, Florida, USA. Poster presentation.
7. 2015. (November). Biomonitoring of Contaminants of Emerging Concern using Wild Eastern Oysters in Georgia, USA Estuaries. Society of Environmental Toxicology and Chemistry 36th Annual Meeting. November 1st - 5th, 2015. Salt Lake City, Utah, USA. Platform presentation.
8. 2015. (April). Environmental Metabolomics and Biomonitoring of Contaminants of Emerging Concern in Wild Eastern Oysters from Georgia, USA Estuaries. 2015 Georgia Water Resources Conference April 28, 2015. Athens, Georgia. Platform presentation.
9. 2015. (March). Environmental Metabolomics and Biomonitoring of Contaminants of Emerging Concern in Wild Eastern Oysters from Georgia, USA Estuaries. Carolinas Regional Chapter of the Society of Environmental Toxicology and Chemistry 2015 Annual Meeting. March 12th - 13th, 2015. Raleigh, North Carolina. Platform presentation.

10. 2014. (November). Environmental Metabolomics and Biomonitoring of Contaminants of Emerging Concern in Wild Eastern Oysters (*Crassostrea virginica*) from Georgia, USA Estuaries. Society of Environmental Toxicology and Chemistry 35th Annual Meeting. November 9th - 14th, 2014. Vancouver, Canada. Poster Presentation.
11. 2014. (August). Eastern Oysters as Biomonitoring of Emerging Contaminants in the Georgia Estuarine Environment. 9th Annual Georgia Environmental Conference. August 20th - 22nd, 2014. Jekyll Island, Georgia. Poster Presentation. 2015.
12. 2014. (May). David Brew and Marsha Black. Validation of Eastern Oysters as Biomonitoring of Pharmaceutical Pollution in the Georgia Estuarine Environment. Gordon Research Seminar and Conference. May 31 - June 6, 2014. Biddeford, Maine. Poster presentation.

Published Abstracts

1. **David Brew**, Marsha Black. Environmental Metabolomics for *In Situ* Monitoring of Eastern Oysters (*Crassostrea virginica*) Affected by Stressors from Point and Nonpoint Sources Along Coastal Georgia, USA. Society of Environmental Toxicology and Chemistry 39th Annual Meeting. November 4th - 8th, 2018. Sacramento, California, USA. Poster presentation.
2. **David Brew**, Marsha Black. Metabolomic Investigations of the Temporal Effects of Exposure to Pharmaceuticals and Personal Care Products and their Mixture in the Eastern Oyster (*Crassostrea virginica*). Society of Environmental Toxicology and Chemistry 38th Annual Meeting. November 12th - 16th, 2017. Minneapolis, Minnesota, USA. Platform presentation.
3. **David Brew**, Matthew Henderson, Marsha Black. Occurrence and Ecological Risk of Pharmaceuticals and Personal Care Products in Two Georgia, USA Estuaries. 3rd International Conference on Environmental Pollution, Restoration and Management. March 6th - 10th, 2017. Quy Nhon, Vietnam. Platform presentation.
4. **David Brew**, Matthew Henderson, Marsha Black. Untargeted Metabolomic Investigations of the Eastern Oyster (*Crassostrea virginica*) Exposed to Pharmaceuticals and Personal Care Products. Society of Environmental Toxicology and Chemistry 37th Annual Meeting. November 6th - 10th, 2016. Orlando, Florida, USA. Poster presentation.
5. **David Brew**, Matthew Henderson, Donna Glinski, Marsha Black. Biomonitoring of Contaminants of Emerging Concern using Wild Eastern Oysters in Georgia, USA Estuaries. Society of Environmental Toxicology and Chemistry 36th Annual Meeting. November 1st - 5th, 2015. Salt Lake City, Utah, USA. Platform presentation.

6. **David Brew**, Matthew Henderson, Marsha Black. Environmental Metabolomics and Biomonitoring of Contaminants of Emerging Concern in Wild Eastern Oysters from Georgia, USA Estuaries. 2015 Georgia Water Resources Conference April 28, 2015. Athens, Georgia. Platform presentation.
7. **David Brew**, Matthew Henderson, Marsha Black. Environmental Metabolomics and Biomonitoring of Contaminants of Emerging Concern in Wild Eastern Oysters from Georgia, USA Estuaries. Carolinas Regional Chapter of the Society of Environmental Toxicology and Chemistry 2015 Annual Meeting. November 12th - 14th, 2015. Raleigh, North Carolina. Platform presentation.
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9. **David Brew** and Marsha Black. Eastern Oysters as Biomonitors of Emerging Contaminants in the Georgia Estuarine Environment. 9th Annual Georgia Environmental Conference. August 20th - 22nd, 2014. Jekyll Island, Georgia. Poster Presentation.
10. **David Brew** and Marsha Black. Validation of Eastern Oysters as Biomonitors of Pharmaceutical Pollution in the Georgia Estuarine Environment. Gordon Research Seminar and Conference. May 31 - June 6, 2014. Biddeford, Maine. Poster presentation.

Professional Honors/Awards

- Awarded the 2015 Procter & Gamble Fellowship for Doctoral Research in Environmental Science through the Society of Environmental Toxicology and Chemistry
- Member of the 2014 - 2015 Future Faculty Program at the University of Georgia
- Awarded the 2014 Outstanding Teaching Assistant Award from the Environmental Health Science Department, University of Georgia
- Awarded the rank of Eagle Scout from the Boy Scouts of America in 2007

Membership and Service to Professional Societies

- American Conference of Governmental Industrial Hygienists (Voting Member)
- The International Society of Regulatory Toxicology & Pharmacology
- Society of Toxicology (Associate member)
- Society of Environmental Toxicology and Chemistry (SETAC)
- Sigma Xi (Associate Member)

Government & University Grants Awarded

- 2015: Innovative and Interdisciplinary Research Grant. Award: \$1,500. The University of Georgia.
- 2015: Procter & Gamble Fellowship for Doctoral Research in Environmental Science. Award: \$15,000
- 2014: Innovative and Interdisciplinary Research Grant. Award: \$1,000. The University of Georgia.
- 2014: Georgia Water Resources Grant, Georgia Water Resources Institute. Award: \$18,000
- 2013: Friends of the Marine Institute Graduate Research Award. Award: \$1,000. The University of Georgia.
- 2013: Public Service and Outreach Graduate Assistantship. Award: \$25,000. The University of Georgia.