

Byran Fuhrmann, PhD, MBA

<https://www.linkedin.com/in/byran-fuhrmann-372014ba/>
+1-213-846-6306
impact@pgdwater.com

CURRENT ROLES

Precision Guided Water (PGD Water)

Chief Solutions Officer

2025 – Present

Limnological Solutions International (LSI)

Environmental Chemist

2025 – Present

Clean Water Help (United States 501(c)3 Public Charity)

Executive Director

2024 – Present

LEADERSHIP

California Lake Management Society (CALMS)

President

2023; 2025 - Present

President-Elect

2022; 2024

Northern California Director

2017 – 2021

North American Lake Management Society (NALMS)

Conference Program Committee Member

2023 – Present

American Water Works Association (AWWA)

Source Water Protection Committee Member

2020 – Present

EDUCATION

Environmental Systems, Ph.D.

University of California, Merced

2020

Environmental Engineering Sciences, M.S.

University of Florida

2016

Master of Business Administration (MBA)

Humboldt State University

2015

Chemistry, B.S.

Humboldt State University

2014

Professional Certifications

Certified Lake Manager

North American Lake Management Society (NALMS)

2023

PROFESSIONAL EXPERIENCE

SePRO Corporation; EutroPHIX Division

Aquatic Technology Development Scientist

2020 – 2025

Commercial Product Development:

Principal scientist and inventor of EutroSORB water quality products (eutrosorb.com):

- EutroSORB SI: Iron-coated Lanthanum 2023 – 2025
 - Associated Patent: US Application: 18/884,019
- EutroSORB G 2022 – 2023
- EutroSORB WC 2021 – 2022
- EutroSORB F 2020 - 2021
 - Associated Patent: US Application: 12,134,083. [US12134083B2](https://patents.google.com/patent/US12134083B2)

Technical Project Lead:

Lead principal investigator (PI) and water quality scientist for the following projects:

- Investigation of Sediment Phosphorus Dynamics in Clear Lake 2025
 - Robinson Rancheria of Pomo Indians, CA.
 - \$150,000 USD
- Phosphorus Remediation in the Ocklawaha Prairie Restoration Area 2024 – 2025
 - St. Johns River Water Management District, FL.
 - \$1,000,000 USD
- Control of Harmful Algal Blooms and Phosphorus Mitigation in C-44 Canal 2023 – 2025
 - Army Corps of Engineering, FL.
 - \$1,700,000 USD
- North Moses Lake Sediment Phosphorus Mitigation 2024
 - Columbia Basin Conservation District, WA.
 - \$3,000,000 USD
- Lake Deeson Phosphorus Remediation Project. 2024
 - Polk County Natural Resources,
 - FL Dept. of Environmental Protection Innovative Technology Grant
 - \$500,000 USD
- Bear Branch Creek Phosphorus Remediation Project 2024
 - Polk Country Natural Resources
 - Florida Department of Environmental Protection Innovative Technology Grant
 - \$120,000 USD
- Rainbow Lake Sediment Phosphorus Management 2024
 - Rainbow Lake Association.
 - \$35,000 USD
- Permitting and Compliance Monitoring for Rule 97 Approval. EutroSORB WC 2022 – 2023
 - Michigan Environment, Great Lakes, and Energy (EGLE).
- H2Ohio Technology Assessment Program 2021
 - [Assessment of Nutrient Management Technology: Phoslock® Phosphorus Locking Technology](#)

University of California, Merced

Instructor, Field Methods of Environmental Chemistry	2019 – 2020
Lab Instructor: Environmental Chemistry	2019
Teaching Assistant: Water and Wastewater Treatment	2017 – 2018
Graduate Student Researcher	2016 - 2020

North Coast Laboratories, Arcata, CA

Quality Assurance Manager	2015 – 2016
Quality Assurance Assistant	2014 – 2015

Humboldt State University, Arcata, CA

Microbiology Research Assistant	2014
---------------------------------	------

PATENTS

Methods of production and use of rare earth enhanced coagulants. US Application: 63/639,677	2025
Aquatic dye and coagulant combination product to improve the longevity of water quality enhancements. US Application: 19/055,470	2025
Methods and compositions of an iron-coated lanthanum compound for remediation of contaminated sediments. US Application: 18/884,019	2024
Methods and systems of analysis of phosphorus release and management in a body of water. US Application: 18/764,671; US20250012774A1	2024
Use of trivalent metals to enhance aquatic pesticide efficacy, surface water, and sediment quality while minimizing risk to aquatic biota. US Application: 18/304,032; US20230339787A1	2023
Methods and compositions of a liquid controlled-release pesticide for targeted delivery and drift reduction. US Application: 18/223,632; US20240041046A1	2023
Compositions and systems for binding nutrients from moving bodies of water. US Application: 12,134,083. US12134083B2 Granted November 5, 2024 2 Patent Citations: CN118851427B and US20210130251A1	2022

PUBLICATIONS & BOOK CHAPTERS

Fuhrmann, B., Espino, M.P., Antatico, C., Dumlaio, A.F., (In Prep). Sediment phosphorus dynamics and implications for management of Laguna de Bay and nearby lakes.

Fuhrmann, B., Willis, B., Barkley, C., Shuler, S., Scott, J., Van Goethem, R., Lurling, M. (In Prep). The Seasonality of Lake Sediment Phosphorus Highlights Opportunities for Improved Water Resource Management.

Fuhrmann, B., Willis, B., Barkley, C., Shuler, S., Scott, J., Van Goethem, R., (In Prep). Geography of phosphorus in lake sediments in the US: Insights from more than 100 lakes.

Fuhrmann, B., Barkley, C., Shuler, S., Van Goethem, R., Scott, J., Willis, B., Beutel, M., Yasseri, S., (In Prep). Organic Matter: The puppet master of sediment phosphorus release and biogeochemistry.

Fuhrmann, B., Barkley, C., Shuler, S., Scott, J., Willis, B., Yasseri, S., Beutel, M., (In Prep). Beyond phosphorus: A comprehensive sediment extraction for enhanced phosphorus geochemical insights.

Fuhrmann, B., Kilgore, C., Barkley, C., Shuler, S., Scott, J., Willis, B., Heilman, H., Bishop, W., Leary, J., White, N., Desko, H., (In Prep). Plant phosphorus chemistry and implications for water resource management.

Easley, R., Fuhrmann, B., Price, K, Long, S., Swan, K. (In Review). Water Quality and Source Water Protection. In *M50 Water Resources Planning*. Fourth Edition. American Water Works Association.

Fuhrmann, B., Fortier, M-O., Beutel, M., Teefy, S., Horne, A., Mobley, M. (In Prep). Economic analysis and life cycle assessment of hypolimnetic oxygenation of Upper San Leandro Reservoir, California.

Hohn, R.A., Abusaba, K.P., Bray, E.N., Hauswirth, S.C., Fuhrmann, B.C., Beutel, M.W., Lamborg, C.H., Mason, R.P. Flegal A.R., Ganguli, P.M. (2025). [Ongoing Mercury Contamination Downstream from the Former New Idria Mercury Mine: Southern Diablo Range of the California Coast Ranges](#). *PLOS Water*. 4(6): e0000328.

Rodal-Morales, N.D., Beutel, M., Fuhrmann, B., Defeo, S., Hansen, A., Brower, S., Pasek, J. (2024). [Hydrology and Oxygen Addition Drive Nutrient, Metals, and Methylmercury Cycling in a Hypereutrophic Water Supply Reservoir](#). *Front. Water, Environmental Water Quality*.

Seelos, M., Rivas Meraz, E., Beutel, M., Traina, S., Fuhrmann, B., Burmistrova, J., Vlassopoulos, D., O'Day, P. (2022). [Evaluation of Manganese Oxide Amendments for Mercury Remediation in Contaminated Aquatic Sediments](#). *American Chemical Society*, 1(12), 1688-1697.

Fuhrmann, B., Beutel, M., Ganguli, P., Zhao, L., Brower, S., Funk, A., Pasek, J. (2021). [Seasonal patterns of methylmercury production, release, and degradation in profundal sediment of a hyper-eutrophic reservoir](#). *Lake and Reservoir Management*, 37(4), 360-377.

Fuhrmann, B., Beutel, M., O'Day, P., Tran, C., Funk, A., Brower, S., Pasek, J., Seelos, M. (2021). [Effects of mercury, organic carbon, and microbial inhibition on methylmercury cycling at](#)

[the profundal sediment-water interface of a sulfate-rich hypereutrophic reservoir.](#)
Environmental Pollution, 268, 115853.

Beutel, M., Fuhrmann, B., Herbon, H., Chow, C., Brower, S., Pasek, J. (2020). [Cycling of methylmercury and other redox-sensitive compounds in the profundal zone of a hypereutrophic water supply reservoir.](#) *Hydrobiologia*, 847, 4425-4446.

Duvil, R., Beutel, M., Fuhrmann, B., Seelos, M. (2018). [Effect of Oxygen, Nitrate and Aluminum Addition on Methylmercury Efflux from Mine-impacted reservoir Sediment.](#) *Water Research*, 144, 740-751.

Beutel, M., Garcia-Gallardo, T., Falcon-Rojas, A., Fuhrmann, B., Hansen, A. (2018). [Use of oxygenation to repress release of redox-sensitive compounds from profundal sediment in the valle de bravo reservoir, Mexico.](#) *International Journal of Environmental Pollution*, 34(6), 17-20.

MAGAZINE, NEWSLETTERS & PODCASTS

[Maximizing Phosphorus Benefits in Agriculture While Safeguarding Water Systems](#) 2024
AgTech 360 Podcast

[Greenhouse Game-Changer: Innovative Approach to Water Mold Control](#) 2024
Greenhouse Magazine

[Proper Pond Management](#) 2023
Greenhouse Magazine

[Stop the Slime](#) 2022
Greenhouse Management

[Eutrophication and Algae Management](#) 2020
Calm Waters Newsletter

[Seasonal and Redox-Mediated Patterns of Methylmercury Release from Profundal Sediment in Hodges Reservoir, California.](#) 2018
Calm Waters Newsletter

GRADUATE STUDENT COMMITTEES

James Silao. University of the Philippines, Diliman. 2024 – Present
MSc in Chemistry

Gregory Jesmok. California State University, Northridge. 2021 – Present
MSc in Geology

Johan van Snippenberg. Wageningen University. 2023 – 2024
MSc in Earth and Environment

CONFERENCE PRESENTATIONS

[2024]

1. Relationships, trends, and takeaways from sediment phosphorus fractionation of more than 500 samples from around the world. North American Lake Management Society. Lake Tahoe, CA.
2. Phosphorus cycling in wetlands, aquatic plants, and algae. North American Lake Management Society. Lake Tahoe, CA.
3. How lake and reservoir water quality impacts drinking water treatability and what lake managers can do about it. North American Lake Management Society. Lake Tahoe, CA.
4. Nutrient and cyanobacteria dynamics in an urban lake. North American Lake Management Society. Lake Tahoe, CA.
5. Proactive Control of Water Mold and Other Waterborne Pathogens. Cultivate Conference, Columbus, OH.
6. The importance of nutrients in lake and pond management. Northeast Cygnet Symposium. Fishkill, NY.
7. Phosphorus in Water-Sediment Systems in 3 Shallow Lakes in Laguna Province, Philippines. INLakes Seminar and Stakeholders Meeting. Manila, Philippines.

[2023]

1. Pros and Cons of Techniques to Bind Phosphorus. North American Lake Management Society. Erie, PA.
2. Advancements in Lake Sediment Analyses. North American Lake Management Society. Erie, PA.
3. Water quality: Common Problems and Solutions. Cultivate Conference, Columbus, OH.
4. Integrating phosphorus mitigation to enhance habitat and water quality. Mid-West Aquatic Plant Management Society. Grand Rapids, MI.
5. Water Quality Grower Tips. American Hort, Back 2 Basics. Online.

[2022]

1. Preventing lake eutrophication and reservoir aging. American Ecological Engineering Society, Baltimore, MD.
2. Water quality and cultivation: Problems and solutions explained. Cultivate Conference, Columbus, OH.
3. Reversing eutrophication by preserving oxygen and preventing muck accumulation using phosphorus mitigation technology. Joint Aquatic Sciences Meeting, Grand Rapids, MI.
4. Increasing source water quality and treatability by managing phosphorus. American Water Works Association, Sustainable Water Management Conference, Denver, CO.
5. Nutrient Management and Healthy Aquatic Food Webs. California Department of Water Resources, Virtual Continuing Education Course
6. The importance of nutrients in lake and pond management. Arizona Lake and Pond Management Symposium, Phoenix, AZ.

[2021]

1. 2 Tools are better than 1: The power of a combined alum and Phoslock addition to improve water quality in lakes and reservoirs. North American Lake Management Society, Oklahoma City, OK.
2. A crash course on algae management and prevention in lakes and reservoirs. North American Lake Management Society, Oklahoma City, OK.

3. Protecting source waters: In-lake and watershed management approaches and advances. AWWA Water Quality Technology Conference. Tacoma, WA.
4. A Novel phosphorus remediation technology for flowing waters. 2021. 10.5 US Symposium on Harmful Algal Blooms. Virtual Platform.
5. Reducing nutrient pollution in flowing water with a novel phosphorus-binding filter. American Ecological Engineering Society. Virtual Platform.

[2020]

1. Factors controlling phosphorus solubility and speciation in aquatic environments. North American Lake Management Society. Virtual Platform.
2. Economic analysis and life cycle assessment of oxygenation of a CA reservoir. North American Lake Management Society. Virtual Platform.
3. Managing the nitrogen to phosphorus ratio for improved aquatic ecosystem function. California Aquatic Bioassessment Workgroup Conference. Virtual Platform.
4. Phosphorus in Aquatic Environments. Department of Pesticide Regulation, Continuing Education Course. Virtual Platform.

[2019]

1. Consequences of Inorganic Hg, Organic Carbon, and Microbial Inhibitors on Hg Methylation. California Lake Management Society. San Diego, CA.
2. Water Quality and Mercury Cycling in a Hyper-Eutrophic Reservoir. Cal State Northridge Guest Lecture. Northridge, CA.
3. Mercury Cycling in a Eutrophic Reservoir. American Ecological Engineering Society. Asheville, N.C.
4. Consequences of Inorganic Hg, Organic Carbon, and Microbial Inhibitors on Hg Methylation. Delta Tributaries Mercury Council. Sacramento, CA.
5. Water Quality Downstream from the Former New Idria Mercury Mine. Southern California SETAC Meeting, Long Beach, CA.

[2018]

1. Cycling in California Reservoirs: Takeaways and Management Strategies to Repress Bioaccumulation. American Ecological Engineering Society. Houston, TX.
2. Patterns of Mercury Release from Profundal Sediment of CA Reservoirs. National Environmental Monitoring Conference. New Orleans, LA.

[2017]

1. Managing for Methylmercury: A Hodges Case Study. California Lake Management Society. Big Bear, CA.
2. Hypolimnetic Oxygenation to Restore Ecosystem Function. American Ecological Engineering Society. Athens, GA.
3. The Role of Oxygen in the Fight for Clean Water. University of California, Office of the President. San Francisco, CA.

AWARDS & HONORS

Scientists Promoting Policy, Access, Research, and Knowledge (SP ² ARK) Fellow	2025
Southern California Edison Fellowship Recipient.	2019

Science Translators Showcase University of California Merced Representative. California Council on Science and Technology. Sacramento, CA.	2019
2 nd Place, Graduate Student Video. Sustainable California Video Competition University of California Water. Statewide, CA.	2018
Finalist, GradSLAM! Graduate Research Presentation Competition University of California. San Francisco, CA.	2017
Professional Development Fellowship University of California, Merced, CA.	2017
1 st Place, GradSLAM! Graduate Research Presentation Competition University of California, Merced. Merced, CA.	2017
Eagle Scout Boy Scouts of America. Troop 911. Brea, CA.	2005
Black Belt: World Taekwondo Federation USA Taekwondo Center. Fullerton, CA.	2004