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Professional Profile

Dr. Gobeil (formerly Folcik) is a toxicologist with an interdisciplinary background in risk assessment, water quality, regulatory compliance, and environmental and ecotoxicology. She performs evaluations and assessments including environmental causal and impact analyses, evaluation of substances, mixtures, formulated products' effects on human and environmental health, product stewardship program development, and advisory/consultation.

Dr. Gobeil integrates her expertise in biology, ecology, toxicology, and human health to assess risk and injury, support regulatory compliance, evaluate sustainability objectives, and support decision making. She has managed product and facility due diligence assessments to assist clients with designing and evaluating their products to meet new and existing regulations. She has advised on the development of product stewardship programs specifically related to ingredient disclosure requirements for multiple product categories, as well as developed testing programs for assessing product composition.

In addition to her work in consumer products, Dr. Gobeil has performed detailed technical assessments of risk and injuries to natural resources. She has experience developing toxicity reference values for aquatic life and wildlife as well as utilizing site-specific data to assess risk of various chemical and environmental stressors. This work has been done to support both site remediation projects and litigation matters.

Dr. Gobeil's academic background and areas of focus included the development of new applications for high energy electron beam irradiation for the removal of cyanobacteria and their associated toxins from drinking water. In this work, she studied the chemical and biological effects of ionizing radiation, the feasibility of implementing such technologies into existing water treatment infrastructure, as well as using irradiation in more traditional applications. In addition to her work assessing cyanotoxins, she has experience investigating the effects of mixtures of agricultural chemicals on freshwater phytoplankton using standard laboratory toxicity tests. She also assessed the degradation of PFAS substances in water, sediments, and sludges with electron beam technology.

Academic Credentials & Professional Honors

Ph.D., Toxicology, Texas A&M University, 2021

B.S., Biochemistry, Florida Institute of Technology, 2017

National Institute of Health T32 Trainee Fellow, 2018

Texas A&M Merit Fellow, 2017-2021

Astronaut Scholar, 2016

Prior Experience

Risk Assessor Intern, Arcadis, 2018-2021

Graduate Research Assistant, Texas A&M University, 2017-2021

Professional Affiliations

Society of Environmental Toxicology and Chemistry (SETAC), 2018 – present

• Regional North Atlantic Chapter, Board Member, 2022 - present

Publications

Folcik AM, Ruggles SA, Pillai SD. Applicability of Electron Beam Technology for the Degradation of Microcystin-LR in Surface Waters. ACS Omega 2023. 8(14), 12664-12670. DOI: 10.1021/acsomega.2c07448

Folcik AM, Klemashevich C, Pillai SD. Response of Microcystis aeruginosa and Microcystin-LR to Electron Beam Irradiation Doses. Radiation Physics and Chemistry 2021. 109534. DOI: 10.1016/j.radphyschem.2021.109534

Folcik AM, Cutshaw K, Haire T, Goode J, Shah P, Zaidi F, Richardson B, Palmer A. G. Quorum Sensing Behavior in the Model Unicellular Eukaryote Chlamydomonas reinhardtii. iScience 2020. 101714. DOI: 10.1016/j.isci.2020.101714

Folcik AM, Pillai SD. A critical review of ionizing radiation technologies for the remediation of waters containing Microcystin-LR and M. aeruginosa. Radiation Physics and Chemistry 2020. 109128. DOI: 10.1016/j.radphyschem.2020.109128

Folcik AM, Haire TC, Cutshaw K, Riddle M, Shola C, Nassani S, Rice P, Richardson B, Nazamoddini-Kachouie N, Palmer AG. Computer assisted tracking of Chlamydomonas species. Frontiers in Plant Science 2019. 10, 1616. DOI: 10.3389/fpls.2019.01616

Raczka MF, Mosblech N A, Giosan L, Valencia BG, Folcik AM, Kingston M, Bush MB A human role in Andean megafaunal extinction? Quarternary Science Reviews 2019. 205(1), 154-165. DOI: 10.1016/j.quascirev.2018.12.005

Raczka MF, Bush MB, Folcik AM, McMichael CH. Sporormiella as a tool for detecting the presence of large herbivores in the Neotropics. Biota Neotrop 2016. 16(1). DOI: 10.1590/1676-0611-BN-2015-0090

Selected Presentations

McArdle, EM, Goodfellow, WL, Folcik, AM, Adams, WJ, Smith, E. Recommended Oral Reference Values for Risk Assessment of Copper. Oral presentation, Society for Risk Analysis, December 7, 2022, Tampa, Florida.

Folcik AM. High energy electron beam technology for the mitigation of M. aeruginosa and microcystin-LR in drinking water. Oral presentation, Society for Environmental Toxicology and Chemistry SciCon2, November 15, 2020, Fort Worth, Texas

Folcik AM, Klemashevich C, Pillai SD. Microcystin-LR breakdown and toxicity alleviation using electron beam irradiation. Oral presentation, Tihany Symposium for Radiation Chemistry, May 25-30, 2019, Siófok, Hungary.

Folcik AM, Pillai SD. Remediation of Environmental Toxins Using Electron Beam Technology. Poster

presentation, Lone Star Chapter Society of Toxicology Annual Meeting, September 7, 2018, Austin, TX.

Folcik AM, Nassani S, Haire N, Nezamoddini-Kachouie N, Palmer A. Semi-automated Tracking of Chlamydomonas reinhardtii for Modeling Tropic Responses. Poster presentation, Northrop Grumman Engineering and Science Design Showcase, April 7, 2017, Melbourne, FL.

Folcik AM, Vijay V. Differential kinase expression as a possible predictor of susceptibility to tyrosine kinase inhibitors organ-specific toxicities. Poster presentation, 2017 Society of Toxicology Annual Meeting, March 14, 2017, Baltimore, MD.

Folcik AM, Schneider K, Amps T. Characterizing the ROAM (Reactive Oxygen Associated Molecule) response in Arabidopsis thaliana. Poster presentation, Northrop Grumman Engineering and Science Design Showcase, April 8, 2016, Melbourne, FL.

Project Experience

Managed the evaluation of garment compositions to achieve compliance with consumer product ingredient disclosure regulation requirements. Further advised on the development of a testing and product stewardship program to maintain compliance.

Utilized environmental causal analyses frameworks and evaluated site-specific data using risk assessment methodology to assess alleged changes to natural resources in relation to the presence of per- and poly-fluoroalkyl substances.

Performed reviews of client patents related to electrical discharge reactors to assess overlap of commercially available products and other patented technologies.

Conducted review of human health and ecological risk assessments in relation to the presence of chlorinated hydrocarbons in waterways affected by decades of complex anthropogenic activities in support of assessing proposed allocation of cleanup costs and responsibility.

Evaluated environmental impact assessment compliance with Greenland international guidelines for mineral exploration for an arbitration matter. Analysis included assessment of studies to determine effects of radioactive emissions to local populations, flora, and fauna.

Evaluated potential PCB-related injuries to waterfowl to assess natural resource damages for General Electric for the Hudson River, New York.

Assessed compliance with environmental permitting requirements, including section 402 and 404 permits, related to a marine construction project in an arbitration matter.

Evaluated site-specific and legacy pesticide/herbicide concentrations to understand fate and transport of contaminants in soil and water following redevelopment of agricultural lands in Canada. Further advised on the implementation of a sediment investigation work plan to identify locations for remediation.

Evaluated acute and chronic toxicological data for aquatic animals and plants in order to develop ecological risk assessment criteria for poly- and per-fluoroalkyl (PFAS) substances.

Investigated the effect of ionizing radiation on DNA integrity and gene expression in toxin producing cyanobacteria. Utilized RNA sequencing data and bioinformatic techniques for determining trends of dose and time on gene expression.

Conducted *in vitro* cytotoxicity tests with various human cell lines to determine toxicity of microcystin-LR with and without irradiation treatment.

Investigated the effects of various water quality parameters on the degradation of microcystin-LR in surface waters using electron beam irradiation technology.

Conducted a multi-directional data mining approach and basal rat gene expression to identify potential biomarkers of organ specific toxicity caused by tyrosine kinase inhibiting drugs.

Developed a freeware-based small particle tracking methodology for use in studying taxis in single celled organisms. Using this methodology, she identified quorum sensing behaviors in eukaryotic green algae.