Jeffrey M. Farner, Ph.D. (he/him)

Address: Department of Civil and Environmental Engineering
FAMU-FSU College of Engineering
2525 Pottsdamer Street Tallahassee, FL 32310-6046
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ACADEMIC APPOINTMENTS

Assistant Professor 2023 – Present
Florida A&M University – Florida State University College of Engineering
Department of Civil and Environmental Engineering

Adjunct Faculty 2023 - Present
Assistant Professor 2020 – 2023
University of Alberta, Department of Civil and Environmental Engineering

Postdoctoral Fellow 2016 – 2020
McGill University, Department of Chemical Engineering
Principal Investigator: Professor Nathalie Tufenkji

EDUCATION

Duke University Durham, NC
PhD in Civil and Environmental Engineering 2016
Center for the Environmental Implications of Nanotechnology (CEINT)
Duke Superfund Research Program
Dissertation: Lights, Camera, Reaction! The Influence of Interfacial Chemistry on Nanoparticle Photoreactivity
Research Advisor: Professor Mark R. Wiesner

Purdue University W. Lafayette, IN
Bachelor of Science in Chemistry, ACS accredited 2004

Université Louis Pasteur, Strasbourg, France October 2003 – July 2004
Purdue University Study Abroad Program

Arizona State University, Barrett Honors College August 2000 – May 2001

TEACHING EXPERIENCE

FAMU-FSU College of Engineering, Tallahassee, FL

CGN 5930 – Advanced Water and Wastewater Treatment Fall 2024
Description: *Conventional water and wastewater treatment relies on chlorination for disinfection, but this is insufficient for some pathogenic organisms like Cryptosporidium, and its use leads to many*

harmful disinfection byproducts. As a result, advanced treatment options, including ozone, UV light, and membrane technologies, have been developed to improve disinfection outcomes and produce cleaner water. In this course, you will become familiar with the history and mechanisms of these technologies and understand how to employ them to meet disinfection targets.

ENG 4022 – Environmental Remediation Spring 2024
Description: *How do you know if a site is contaminated and in need of remediation? What remediation processes will be effective? How do the properties of the soil and chemicals influence contaminant partitioning and transport? This course covers the regulations, important physical and chemical parameters, and remediation techniques that are able to restore contaminated sites to productive use.*

University of Alberta, Edmonton, AB
EnvE 326 – Environmental Site Assessment Fall 2022
Description: *Protection of human/ecological receptors from contaminant exposure. Key topics: risk management frameworks (guideline setting/use of standards for air, water, and soil); environmental investigation strategies (sample program design and collection techniques, data interpretation); environmental site assessment standards; conceptual contaminated site modeling; contaminant transport calculations.*

CivE 526 – Soil Remediation Fall 2021 – 2022
Description: *Identification of regulations and guidelines applicable to contaminated site assessment and remediation. Review of soil and contaminant properties that affect contaminant partitioning and movement in subsurface soils. Study of physical, chemical, and biological treatment methods for the remediation of contaminated soils.*

CivE 728 – Water and Wastewater Treatment Winter 2020 – 2023
Description: *Theory, design, and application of new or alternative processes for treatment of water and wastewater, including ozone, chlorine dioxide, ultraviolet radiation, advanced oxidation, membrane, and others.*

North Carolina Central University, Durham, NC
ESNC 3900 – Environmental Sampling and Analysis Spring 2016
Co-Instructor, Lead Lecturer
Department of Environmental, Earth, and Geospatial Sciences
Description: *Environmental Sampling and Analysis is an upper-level course designed to provide students with the ability and skills necessary to measure chemical and biological contaminants in environmental media. The course provides rigorous preparation for students interested in careers that will involve collection and analysis of environmental samples as well as students planning to pursue research careers.*

PEER-REVIEWED PUBLICATIONS (Supervised students are double underlined. Mentored or committee member students are underlined)

27 published peer reviewed publications, 4700 citations, h-index 20.

27. Lapointe, M., Jahandideh, H., Alimi, O. S., **Farner, J. M.**, & Tufenkji, N. (*2025*). Sustainable granular materials improve removal of natural organic matter, turbidity and microplastics

during adsorption, ballasted flocculation and granular filtration. *Journal of Environmental Chemical Engineering*, 13(2), 116012.

26. Ibna Hafiz, A. M., Ahmadisharaf, E., Salehi, M., **Farner, J.**, White, J. C., Zeng, E. Y., & Nazari, B. (*2025*). A Review of Processes and Models for the Export of Microplastics From Terrestrial to Aquatic Systems. *Wiley Interdisciplinary Reviews: Water*, 12(1), e70004.
25. Haffiez, N., Kalantar, E., Zakaria, B. S., Azizi, S. M. M., **Farner, J. M. ***, & Dhar, B. R. ***** (*2024*). Impact of aging of primary and secondary polystyrene nanoplastics on the transmission of antibiotic resistance genes in anaerobic digestion. *Science of The Total Environment*, 947, 174213. ***Corresponding Authors**
24. Nurain, A., Zhang, Y., Meier, D., **Farner, J. M.**, Goss, G., & Arlos, M. J. (*2024*). Sorption Behavior of Trace Organic Chemicals on Carboxylated Polystyrene Nanoplastics. *ACS Environmental Science & Technology Water*, 4(9), 4018-4027.
23. Hernandez, L.M.*; **Farner, J.M.***; Claveau-Mallet, D.; Okshevsky, M.; Jahandideh, H.; Matthews, S.; Roy, R.; Yaylayan, V.; Tufenkji, N. *(2023)* Optimizing the Concentration of Nile Red for Screening of Microplastics in Bottled Water. *ACS Environmental Science & Technology Water*. 3(4): 1029-1038. ****Equal Contribution***
22. Hernandez, L.M.*; **Farner, J.M.***; Claveau-Mallet, D.; Okshevsky, M.; Jahandideh, H.; Matthews, S.; Roy, R.; Yaylayan, V.; Tufenkji, N. *(2023)* Optimizing the Concentration of Nile Red for Screening of Microplastics in Bottled Water. *Environmental Science & Technology Water*. 3(4): 1029-1038. ****Equal Contribution***
21. Hernandez, L.M.; Grant, J.; Shakeri Fard, P.; **Farner, J.M.***; Tufenkji, N*. *(2023)* Analysis of Ultraviolet and Thermal Degradations of Four Common Microplastics and Evidence of Nanoparticle Release. *Journal of Hazardous Materials Letters*. (4) 100078. ***Corresponding Authors**
20. Lapointe, M.; Jahandideh, H.; **Farner, J.M.**; Tufenkji, N. (2022). Super-bridging Fibrous Materials for Water Treatment. *npj Clean Water*. 5(1): 1-10.
19. Alimi, O.S.; **Farner, J.M.**; Rowenczyk, L.; Petosa, A.R.; Clauveau-Mallet, D.; Hernandez, L.M.; X X Wilkinson, K.J.; Tufenkji, N. (2022). Mechanistic Understanding of the Aggregation Kinetics of Nanoplastics in Marine Environments: Comparing Synthetic and Natural Water Matrices. *Journal of Hazardous Materials Advances.* (7) 100115
18. Azimzada, A.; Jreije, I.; Hadioui, M.; Shaw, P.; **Farner, J.M.**; Wilkinson K.J. (2021). Quantification and Characterization of Ti-, Ce-, and Ag-Nanoparticles in Global Surface Waters and Precipitation. *Environmental Science & Technology*. 54(14): 9836-9844.
17. Alimi, O.S.; **Farner, J.M.**; Tufenkji, N. (2021). Exposure of Nanoplastics to Freeze-Thaw Leads to Aggregation and Reduced Transport in Model Groundwater Environments. *Water Research*. 189, 116533
16. **Farner, J.M.***; De Tommasso, J.; Mantel, H.; Cheong, R.S.; Tufenkji, N.* (2020). Effect of Freeze/Thaw on Aggregation and Transport of nano-TiO2 in Saturated Porous Media. *Environmental Science: Nano*. 7(6): 1781-1793. ***Corresponding Authors**
15. Okshevsky, M.; Gautier, E.; **Farner, J.M.**; Schreiber, L.; Tufenkji, N. (2020). Nanoplastic Impacts Biofilm Formation of Marine Bacteria in a Species-Specific Manner. *Environmental Microbiology Reports*. 12(2):203-213.
14. Azimzada, A.; **Farner, J.M.**; Hadioui, M.; Liu-Kang, C.; Jreije, I.; Tufenkji, N.; Wilkinson, K.J. (2020). Release ofTiO2 Nanoparticles from Painted Surfaces in Cold Climates: Characterization Using a High Sensitivity Single-Particle ICP-MS. *Environmental Science: Nano*. 6(8): 2532-2543

13. Azimzada, A.; **Farner, J.M.**; Jreije, I.; Hadioui, M.; Liu-Kang, C.; Tufenkji, N.; Shaw, P.; Wilkinson, K.J. (2020). Single- and multi-element quantification and characterization of TiO2 nanoparticles released from outdoor stains and paints. *Frontiers in Environmental Science*. 8(91)
12. Lapointe, M.; **Farner, J.**; Hernandez, L.M.; Tufenkji, N. (2020). Understanding and Improving Microplastics Removal during Water Treatment: Impact of Coagulation and Flocculation. *Environmental Science & Technology*. 54(14): 8719-8727.
11. **Farner, J.M.**, Cheong, R.S., Mahé, E., Anand, H., Tufenkji N. (2019). Nanoparticle Stability and Photoreactivity are Key Factors in Acute Toxicity of TiO_2 to *Daphnia magna*. *Environmental Science: Nano*, 6(8), 2532-2543.
10. Nguyen, B., Claveau-Mallet, D., Hernandez, L.M., Xu, G., **Farner, J.M.**, Tufenkji N. (2019). Separation and Analysis of Microplastics and Nanoplastics in Complex Environmental Samples. *Accounts of Chemical Research*, 52(4), 858-866.
9. Alimi, O. S., **Farner Budarz, J.**, Hernandez, L. M., Tufenkji, N. (2018). Microplastics and Nanoplastics in Aquatic Environments: Aggregation, Deposition, and Enhanced Contaminant Transport. *Environmental Science & Technology*, *52*(4), 1704-1724.
Listed in ES&T's Top 20 most downloaded articles for the previous 12 months, March 2019
8. **Farner Budarz, J.,** Cooper, E. M., Gardner, C., Hodzic, E., Ferguson, P. L., Gunsch, C. K., & Wiesner, M. R. (2017). Chlorpyrifos Degradation Via Photoreactive TiO_2 Nanoparticles: Assessing the Impact of a Multi-Component Degradation Scenario. *Journal of Hazardous Materials*. 372, 61-68.
7. **Farner Budarz, J.,** Turolla, A., Piasecki, A. F., Bottero, J. Y., Antonelli, M., Wiesner, M. R. (2017). Influence of Aqueous Inorganic Anions on the Reactivity of Nanoparticles in TiO_2 Photocatalysis. *Langmuir*, *33*(11), 2770-2779.
6. Turolla, A., Piazzoli, A., **Farner Budarz, J.**, Wiesner, M. R., Antonelli, M. (2015). Experimental Measurement and Modeling of Reactive Species Generation in TiO_2 Nanoparticle Photocatalysis. *Chemical Engineering Journal*, *271*, 260-268. ***Cover Article***
5. Badireddy, A.R., **Farner Budarz, J.**, Marinakos, S. M., Chellam, S., Wiesner. M. R. (2014). Formation and Persistence of Silver Nanoparticles in Visible Light Illuminated Aquatic Systems and their Effect on Bacterial Lysis. *Environmental Engineering Science*, *31*(7), 338-349.
4. Badireddy, A. R.*, **Farner Budarz, J.***, Chellam, S., Wiesner, M. R. (2012). Bacteriophage Inactivation by UV-A Illuminated Fullerenes: Role of Nanoparticle-Virus Association and Biological Targets. *Environmental science & technology*, *46*(11), 5963-5970. ****Equal Contribution***
3. Jassby, D., **Farner Budarz, J.**, Wiesner, M. (2012). Impact of Aggregate Size and Structure on the Photocatalytic Properties of TiO_2 and ZnO Nanoparticles. *Environmental Science & Technology*, *46*(13), 6934-6941.
2. Chae, S. R., Therezien, M., **Farner Budarz, J.**, Wessel, L., Lin, S., Xiao, Y., Wiesner, M. R. (2011). Comparison of the Photosensitivity and Bacterial Toxicity of Spherical and Tubular Fullerenes of Variable Aggregate Size. *Journal of Nanoparticle Research*, *13*(10), 5121-5127.
1. Chae, S. R., Badireddy, A. R., **Farner Budarz, J.**, Lin, S., Xiao, Y., Therezien, M., Wiesner, M. R. (2010). Heterogeneities in Fullerene Nanoparticle Aggregates Affecting Reactivity, Bioactivity, and Transport. *ACS Nano*, *4*(9), 5011-5018.

PREPRINT PUBLICATIONS

1. Lapointe, M.; Jahandideh, H.; Farner, J; Tufenkji, N. (2021) Sustainable Fiber-Based Materials as Super-bridging Agents, Adsorbents, and Ballast Media ChemRxiv Cambridge: Cambridge Open Engage; 2021; This content is a preprint and has not been peer-reviewed. 10.33774/chemrxiv-2021-jrrhr (Sep 13, 2021 Version 1)

BOOK CHAPTERS

1. Pruitt, T.R., Chan, M.Y., Prussin II, A.J., **Farner, J.M.**, Mensch, A.C., Hochella, Jr, M.F. (2020) Environmental Nanoresearch Centers. In *21st Century Nanoscience - A Handbook*. Taylor & Francis (CRC Press).

INVITED TALKS AND LECTURES

9. **Santa Clara University**, Department of Chemistry. September 30, 2022. "Everything Happens at the Surface: Micro- and Nanoplastics in Aquatic Environments". San Jose, CA. Chem115 Chemistry and Biochemistry Seminar.
8. **Washington State University**, Department of Civil and Environmental Engineering. April 11, 2022. "Micro- and Nanoplastic Fate and Transport in Aquatic Environments." Online. Environmental Engineering Seminar.
7. **Western Washington University**, Department of Environmental Science. October 15, 2020. "Nano-agriculture as a safe(?), sustainable(?) answer to rising food production challenges." Online. Invited Guest Lecturer, ESCI 497 Emerging Contaminants.
6. **Redpath Museum,** McGill University. April 10, 2019. "Big Challenges with Small Plastics" Montreal, QC. Public talk on micro- and nanoplastics for the series Mini-Science: The Future of Plastic.
5. **Malvern Panalytical Webinar**, October 19, 2018. "Nanoparticle Stability and Photoreactivity are Key Factors in the Acute Toxicity of TiO_2 to *Daphnia magna*." Online. Zetasizer Users Group Meeting (ZUM-1).
4. **McGill University,** Department of Civil Engineering. September 30, 2019. "Big Challenges with Small Plastics – Detection of Micro- and Nanoplastics". Montreal, QC. CIVE 615. Environmental Engineering Seminar.
3. **Malvern Panalytical Webinar**. October 6, 2021. "Investigating the behavior of micro- and nanoplastic particles in the environment." Online. Zetasizer Users Group Meeting (ZUM-1).
2. **North Carolina Central University**, Department of Earth and Atmospheric Sciences. October 22 2015. "Water Treatment and the Superfund". Durham, NC. EASC 5020 – Water and Mineral Resources.
1. **Duke Superfund Research Program** June 29, 2016. "Synergies and Antagonisms in Nano-Bio Based Strategies for Sediment Remediation" REU Seminar.

CONFERENCE PRESENTATIONS (Supervised students are double underlined. Mentored or committee member students are underlined)

21. **Farner, J.M.;** Nurain A.; Arlos, M.J. "Sorption Behavior of Trace Organics on Carboxylated Polystyrene Nanoplastics." 13th Sustainable Nanotechnology Organization Conference. Providence, Rhode Island, November 8-10, 2024. Oral Presentation.

21. Kalantar, E.; Bugg, N.; Bourgeois F.W.; Zhang, Y.; Goss, G.G.; **Farner, J.M.** "Production of Weathered Micro- and Nanoplastics for Improved Environmental Testing." International Conference on the Environmental Effects of Nanoparticles and Nanomaterials (ICEENN2022). Montreal, QC, August 24-26, 2022. Poster Presentation.

20. Nurain, A.; Zhang, Y.; **Farner, J.**; Goss, G.; Arlos, M. "Adsorption of Trace Organic Chemicals to Polystyrene Nanoplastics" International Conference on the Environmental Effects of Nanoparticles and Nanomaterials (ICEENN2022). Montreal, QC, August 24-26, 2022. Oral presentation.

19. Grant, J. *, Hernandez, L.M., **Farner, J.M.**, Tufenkji, N., "X-ray Photoelectron Spectroscopy, Scanning Electron Microscopy and Surface Roughness Testing: Characterizing Polystyrene Nanoplastic Formation from UV-light Laboratory Weathering" American Indian Science and Engineering Society (AISES) National Conference. Milwaukee, WI. October 10-13, 2019. Poster Presentation ***Grant, J., Winner, Best Graduate Student Poster Award***

18. **Farner, J.M.,** Azimzada, A., Hadioui, M., Tufenkji, N., Wilkinson, K., "Release of TiO_2 Nanoparticles from Painted Surfaces under Natural Weathering Conditions in Northern Climates" Gordon research Conference on Environmental Nanotechnology. Newry, ME, June 2-7, 2019. Poster Presentation

17. **Farner, J.M.** *, Hernandez, L.M., Okshevsky, M., Yousefi, N., Tufenkji, N. "Microplastics and Nanoplastics In Our Drinking Water and Other Consumer Products" SciX 2018, The Great Scientific Exchange. Joint Pittcon / FACSS Session. Atlanta, GA, October 21-26, 2018. Oral Presentation ***Invited Speaker***

16. **Farner, J.M.**, De Tommaso, J., Mahé, E., Cheong, R., Mantel, H., Tufenkji, N. "Are All NPs Created Equally? A Comparison of Transport and Toxicity for Two Commercially Relevant TiO_2 NPs" 13th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials (ICEENN 2018). Duke University, Durham, NC, September 5-8, 2018. Oral Presentation

15. Azimzada, A., **Farner, J.M.**, Hadioui, M., Tufenkji, N., Wilkinson, K., "Release of TiO_2 from Painted Surfaces Under Natural Weathering Conditions in Northern Climates: Characterization using SP-ICP-MS" 13th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials (ICEENN 2018). Duke University, Durham, NC, September 5-8, 2018. Poster Presentation

14. **Farner Budarz, J.**, Mahé, E., Tufenkji, N., "Impact of UV-Mediated TiO_2 Photoreactivity on *Daphnia magna*" ACS Colloids and Surface Science Symposium. Penn State University, State College, PA, June 10-13, 2018. Oral Presentation

13. **Farner Budarz, J.**, De Tommaso, J., Cheong, R., Mantel, H., Tufenkji, N., "Stability and Transport of Two Different TiO_2 Nanoparticles in the Canadian Environment" ACS Colloids and Surface Science Symposium. Penn State University, State College, PA, June 10-13, 2018. Oral Presentation

12. **Farner Budarz, J.***, De Tommaso, J., Mahé, E. Cheong, R., Tufenkji, N., "Evaluating the Environmental Risks of Nanoparticle Release from Nano-Enhanced Materials in the Canadian

Environment". Gordon Research Conference: Environmental Nanotechnology. Stowe, VT, June 18 – 23, 2017. Poster Presentation ***Winner, Best Postdoctoral Poster Award***

11. **Farner Budarz, J.**, Gardner, C., Cooper, E., Gunsch, C.K., Wiesner, M.R., "Photoreactive TiO_2 Nanoparticles for Chlorpyrifos Degradation: Synergies and Antagonisms in Nano-Bio Based Remediation Strategies". Puerto Rico Superfund Research Program Annual Meeting. San Juan, Puerto Rico, November 18-20, 2015. Poster Presentation
10. **Farner Budarz, J.**, Gardner, C., Cooper, E., Gunsch, C.K., Wiesner, M.R., "Photoreactive TiO_2 Nanoparticles for Chlorpyrifos Degradation: Synergies and Antagonisms in Nano-Bio Based Remediation Strategies" Fourth Sustainable Nanotechnology Organization Conference. Portland, OR, November 8-10, 2015. Oral Presentation
9. **Farner Budarz, J**., Turolla, A., Piazzoli, A., Piasecki, A., Antonelli, M., Wiesner, M.R., "TiO_2 Nanoparticle Photoreactivity: Modeling the Impact of Anions in Suspension" Gordon research Conference on Environmental Nanotechnology. Mount Snow, VT, June 21-26, 2015. Poster Presentation
8. **Farner Budarz, J.**, Gardner, C., Cooper, E., Gunsch, C.K., Wiesner, M.R., "Photoreactive TiO_2 Nanoparticles for Chlorpyrifos Degradation: Synergies and Antagonisms in Nano-Bio-Based Remdiation Strategies" 6th International Water and Health Seminar, Cannes, France. June 16-18, 2014. Oral Presentation.
7. **Farner Budarz, J.**, Rhoads, K. R., Garnder, C., Le, C., Gunsch, C.K., Wiesner, M.R. "Microbial Effects of Chlorpyrifos Remediation via UV-Illuminated TiO_2" Gordon Research Conference on Environmental Nanotechnology. Stowe, VT, June 2-7, 2013. Poster Presentation
6. **Farner Budarz, J.,** Badireddy, A. R., Jassby, D., Wiesner, M. R., "Influences on Nanoparticle Reactivity: Effect of Aggregation" CEINT Annual Meeting. Durham, NC, March 4-5, 2013. Poster Presentation, Oral Presentation
5. **Farner Budarz, J.,** Badireddy, A.R., Chellam, S., Wiesner M.R. "Bacteriophage Inactivation by UV-A Illuminated Fullerenes: Role of Nanoparticle-Virus Association" AWWA Water Quality Technology Conference Special Topic Session – Nanomaterials in Water Treatment. Toronto, Ontario, November 4–8, 2012. Oral Presentation, Conference Proceedings
4. Rhoads, K. R., **Farner Budarz**, **J.**, Gardner, C.M., Le, C., Gunsch, C. K., Hsu-Kim, H., Wiesner M.R. "Microbial Effects of Chlorpyrifos Remediation with UV-illuminated Nano-TiO_2" The 25th Annual Meeting of the Superfund Research Program. Raleigh, NC. October 21-24, 2012. Poster Presentation
3. Badireddy, A.R., **Farner Burdaz, J.**, Chellam, S., and Wiesner, M.R., " Bacteriophage Inactivation by UV-A Illuminated Fullerenes: Role of Nanoparticle-Virus Association and Biological Targets," Gordon Research Conference - Environmental Sciences: Water, Holderness, NH, June 24-29, 2012. Poster Presentation
2. **Farner Budarz**, **J.**, Jassby, D., Wiesner, M. R. "Impact of Aggregate Size and Structure on the Photocatalytic Properties of TiO_2 and ZnO Nanoparticles" Gordon Research Conference - Environmental Nanotechnology. Waterville Valley, NH, May 29–June 3, 2011. Poster Presentation
1. Chae**,** S. R., Xiao Y., Badireddy, A. R., **Budarz**, **J. F.,** Valladares, A., Mitra, S., Wiesner M. R., The Effects of Humic Acid and Cations on Photocatalytic Activity and Aqueous Transport of Fullerene-Based Nanoparticles. 239th ACS National Meeting, San Francisco, CA, March 21–25, 2010. Conference Proceedings

GRADUATE STUDENT SUPERVISION

9. Shekinah Adaghe, Ph.D. student
   Topic: Aggregation and disaggregation of micro- and nanoplastics
8. Alexander Rodriguez, M.Sc. Student
   Topic: Co-transport of FTOH and weathered nanoplastics.
7. Nabiha Tonima, M.Sc. Student
   Topic: Removal of microplastic via filtration with modified hydrophobic biochar
6. Kiera Greenaway, M.Sc. Student
   Topic: Impact of UV microplastic weathering in the presence of NOM.
5. Fleur Issac, M.Sc. March 2025
   Thesis Title: Investigating the potential toxicity of copper nanoparticles from agricultural runoff on *Daphnia Magna*
   Joint supervision (50/50) with Tamzin Blewett, Dept. of Biological Sciences, UofA
4. Elnaz Kalantar, M.Sc. January 2024
   Thesis Title: Developing aged and unaged micro- and nanoplastics for environmental testing.
3. Harry Song, M.Eng. August 2023
   M.Eng. Capstone Project
2. Dhriti Gupta, M.Eng. August 2023
   M.Eng. Capstone Project
1. Karahan Yanik, M.Eng. August 2023
   M.Eng. Capstone Project

UNDERGRADUATE SUPERVISION

3. John Parios May 2024 – Present
   UG Student, Civil/Environmental Engineering
   Topic: Production of micro- and nanoplastics for environmental testing.
2. Natasha Bugg May 2021 – June 2023
   UG Student, Department of Biological Sciences. 2021 I-Steam Pathways Internship. 2021 AWSN Fellowship.
   Topic: Production of micro- and nanoplastics for environmental testing.
1. Finn Bourgeois, UG Student (CO-OP) May 2022 – August 2022
   Topic: Optimization of microplastics production for environmental testing.

DOCTORAL STUDENT COMMITTEE MEMBER

15. Jesse Badu-Yeboah, Ph.D. Student
    Main advisor: Alamdari, Civil and Environmental Engineering, FAMU-FSU CoE
14. Elizabeth Modupe, Ph.D. Student
    Main advisor: Chen, Civil and Environmental Engineering, FAMU-FSU CoE
13. Fahad Hasan, Ph.D. Student
    Main advisor: Chen, Civil and Environmental Engineering, FAMU-FSU CoE

12. Abdul Mobin Ibna Hafiz, Ph.D. Student
    Main advisor: Ahmadisharaf, Civil and Environmental Engineering, FAMU-FSU
11. Charles Amanze Ph.D. Student
    Main advisor: Tang, Civil and Environmental Engineering, FAMU-FSU CoE
10. Dennis Ssekimpi Ph.D. Student
    Main advisor: Tang, Civil and Environmental Engineering, FAMU-FSU CoE
9. Mojtaba Goukeh Ph.D. (2025)
    Main advisor: Tang, Civil and Environmental Engineering, FAMU-FSU CoE
8. Mahnaz Afroz Ph.D. (2024)
    Main Advisor: Chen, Civil and Environmental Engineering, FAMU-FSU CoE
7. Ermias Tesfamariam Ph.D. (2024)
    Main advisor: Tang, Civil and Environmental Engineering, FAMU-FSU CoE
6. Any-lynne Balaberda Ph.D. (2023)
    Main Advisor: Ulrich, Civil and Environmental Engineering, UofA
5. Najiaowa Yu, Ph.D. (2022)
    Main Advisor: Liu, Civil and Environmental Engineering, UofA
4. Spencer Yu, Ph.D. (2024)
    Main Advisor: Zhang, Civil and Environmental Engineering, UofA
3. Anqui Mou, Ph.D.
    Main Advisor: Liu, Civil and Environmental Engineering, UofA
2. Seyed Mohammad Azizi, Ph.D. (2023)
    Main Advisor: Dhar, Civil and Environmental Engineering, UofA
1. Yingdi Zhang, Ph.D. (2022)
    Main Advisor: Liu, Civil and Environmental Engineering, UofA

MASTERS STUDENT COMMITTEE MEMBER

2. Afrida Nurain, MSc. Student (2023)
    Main Advisor: Arlos, Civil and Environmental Engineering, UofA
1. Arian Farajizadeh, MSc. Student
    Main Advisor: Goss, Biological Sciences, UofA

STUDENT MENTORSHIP

13. Laura Hernandez (PhD) Spring 2017 – Summer 2020
    Microplastic detection and quantification in Canadian surface and drinking waters.
    PDF, Chemical Engineering, McGill University.
12. Hemanshu Anand (UG) Summer 2018
    Photoreactivity of TiO2 NPs in simulated surface water.
11. Agil Azimzada (PhD) Fall 2016 – Summer 2020
    Release of NPs from outdoor paint and stain under Canadian environmental conditions.
    PDF, Federal Institute for Materials Research and Testing, Berlin.
10. Olubukola Alimi (PhD) Spring 2017 – Summer 2020
    Nanoplastic transport and aggregation in high salinity waters and groundwaters.
    PDF, Chemistry, Université de Montréal.

9. Joel Grant, (MSc) Fall 2018 – Summer 2020
   Release of nanoplastics and microplastics under Canadian environmental conditions.
8. Heather Mantel, (UG) Summer 2018 – Fall 2018
   Transport of TiO2 NPs in saturated media.
   MSc Student, Sustainable Development, University of Sussex.
7. Jacopo De Tommaso, (MEng) Summer 2018 – Fall 2017
   Transport of TiO2 NPs in saturated media.
   PhD Student, Chemical Engineering, Polytechnique Montréal.
6. Emeric Mahé, (MSc) Spring 2017 –Summer 2017
   Establishment of Daphnia magna colony and growth protocol.
   Research Assistant, Biology, McGill University.
5. Rachel Cheong (UG) Summer 2017
   Transport of TiO2 NPs in saturated media.
   MSc Student, Chemical Engineering, McGill University.
4. Alexander Piasecki, (UG) Summer 2015
   Aggregation of TiO2 NPs in inorganic anions.
   Advanced Logistics Optimization Engineer, Exxon Mobil.
3. Chantalle Le, (UG) Summer 2012
   Inactivation of bacteria by TiO2 NPs.
   Sr. Manager, Amgen Biotechnology.
2. Nicholas Keyes, (UG) Summer 2010
   Photoreactivity of carbon nanotubes.
   Scientist, PPD Pharmaceuticals.
1. Sumit Mitra, (HS) Summer 2009
   Photoreactivity of fullerene nanoparticles.

RESEARCH FUNDING

5. Florida State First Year Assistant Professor (FYAP) Program. Production of Weathered, Secondary Nanoplastics for Environmental Testing. Summer 2024. $20,000. [PI: Farner]
4. Alberta Conservation Authority. Effects of Copper Nanopesticide Agricultural Runoff on Fish and Fish Prey Items in Alberta Waters. April 2022 – March 2023. $20,700. [PIs: Blewett, Farner]
3. National Sciences and Engineering Research Council, NSERC (Discovery). Investigating colloidal interactions to improve knowledge of transformations, transport, and impacts of micro- and nanoplastics in environmental freshwaters. April 2021 – March 2026. $155,000 [PI: Farner]
2. National Sciences and Engineering Research Council, NSERC (Discovery Supplemental ECR). Investigating colloidal interactions to improve knowledge of transformations, transport, and impacts of micro- and nanoplastics in environmental freshwaters. April 2021 – March 2026. $12,500 [PI: Farner]
1. Environment and Climate Change Canada (Increasing Knowledge on Plastic Pollution Initiative). Micro and nanoplastics as vectors for organic contaminants: modelling fate and transport to predict impacts and thresholds of exposure. October 2020 – March 2022. $159,117 [PIs: Farner, Goss, and Arlos]

RESEARCH COLLABORATIONS WITH INDUSTRIAL AND GOVERNMENT PARTNERS

Veolia Water Technologies August 2018 – March 2019

- Developed iron-functionalized sand for enhanced polymer attachment during ballasted flocculation.
- Optimized timing of polymer addition during water treatment process.
- Patent applications for this process are being explored.

Health Canada January 2019 – present

- Tested raw and treated municipal drinking water for presence of microplastics.
- Results will inform government decision makers.

CBC News (Marketplace) February 2018 – April 2018

- Developed protocol for staining microplastics for improved detection and quantification of microplastics in Canadian bottled drinking water.
- Results were covered on *CBC News* (Marketplace) and *Radio-Canada*.

Coatings Research Institute, Belgium October 2016 – October 2018

- NSERC Strategic grant with Belgian industrial partnership.
- Determined the different chemistries, fate and toxicity in natural waters of pristine engineered nanoparticles (ENPs) and ENPs released from paint subjected to environmental weathering scenarios, such as cold climates, relevant to Canada.

MEDIA COVERAGE AND PUBLIC KNOWLEDGE TRANSLATION

9. Researcher Insights: Environmental Weathering Transforms Plastic Pollution. August 15, 2024. Open Access Government https://doi.org/10.56367/OAG-044-11601.
8. What happens when plastics break down into microplastics and nanoplastics? May 2, 2024. Futurum Careers https://doi.org/10.33424/FUTURUM493
7. Live Interview. *CTV NEWS Edmonton.* Discussion of plastic pollution for Earth Day. April 22, 2021.
6. Live Interview. "Earth Day Eve: Protecting the Planet" *Real Talk with Ryan Jespersen*. Discussion of micro- and nanoplastics in water supplies. April 21, 2021.
5. Media coverage of Alimi et al. ES&T, 2018. "Removing Microplastics from our Environment" Kathleen Belton, Opinion. *Canada's National Observer magazine*. June 29, 2018.
4. Media coverage of research detecting and quantifying the presence of microplastics in Canadian bottled waters:
   - "H_2O + Plastique". Article covering the presence of microplastics in bottled water. *Chatelaine* magazine. July/August 2018.
   - N. Tufenkji live radio interview for Accessible Media Inc, a non-profit multi-media broadcaster serving Canada's blind and partially sighted audiences. April 10, 2018.
   - Recorded television segments on *CBC News* (Marketplace) and *Radio-Canada* and live radio interview for *Radio-Canada.* April 6, 2018.
3. "Making Heads and Tails of Nanotechnology" Guest submission describing how researchers seek to understand the balance of promise and uncertain environmental impacts with novel nanotechnologies, Superfund@Duke Research Blog "ToxInsider". November 2013.

2. "CEINT Mesocosms in the Duke Forest, an update" CEINT news article describing ongoing research in mesocosm facilities for center website. ceint.duke.edu/news-events. February 2015.
1. National Informal STEM Education Network (NISENET) NanoDays. Design and present hands-on activities to introduce children and parents to nanomaterials and nanotechnology. Marbles Children's Museum, Raleigh, NC & Museum of Life and Science, Durham, NC. 2009-2014.

AWARDS

- Mary. H. Brown Endowment Fund supporting initiatives of student mental and physical health. (Awarded to the Graduate Engineering and Equity Committee, GEEC, McGill University), 2018, 2019.
- Nominee (Graduate Engineering and Equity Committee, GEEC, McGill University), University wide "Award for Equity and Community Building", 2018, 2019.
- Best Postdoctoral Poster Award, "Evaluating the Environmental Risks of Nanoparticle Release from Nano-Enhanced Materials in the Canadian Environment". Gordon Research Conference: Environmental Nanotechnology, Stowe, VT, 2017.
- Jeffrey B. Taub Environmental Engineering Graduate Student Award, Pratt School of Engineering, Duke University, 2012.
- Jeffrey B. Taub Environmental Engineering Graduate Student Award, Pratt School of Engineering, Duke University, 2011.

ACADEMIC SERVICE

Equity Committees:	Graduate Committee (FAMU-FSU CoE 2024-2025), Lab Committee FAMU-FSU CoE 2023-2024), Equity, Diversity, and Inclusivity (U Alberta departmental service, 2022-2023); founding member of Graduate Engineering Equity Committee (GEEC, McGill University, July 2017 – April 2020)
Steering Committee:	CEINT Student Steering Committee (CSSC, Duke University, 2013-2016).
Panelist:	"Equity in Engineering" (ENGG 400, The Practice of the Engineering Profession, Jan 2022); Graduate School Experience Panel Discussion for CEINT REU students, (Summer 2011, 2012)
Session Facilitator:	Session Chair: Chemical Engineering Research Day; Sessions included "Reaction Engineering and Catalysis", "Energy and Fluid Dynamics" (Polytechnique Montréal - McGill University - Université Laval, March 19 & 20, 2019); Workshop facilitator: Opportunities and Challenges for Advanced Materials in Water Treatment and Reuse: Targeting Contaminants of Emerging Concern (Organized by Pedro Alvarez, Trottier Institute for Sustainability in Engineering and Design (TISED) Scholar-in-Residence. McGill University, August 28, 2017)
Journal Reviewer:	*Water Research*, *Environmental Science & Technology*, *Desalination*, *Environmental Science: Nano*
Proposal Reviewer:	National Sciences and Engineering Research Council (Canada), National Science Foundation (US), Deutsche Forshungsgemeinshaft (Germany), Agence Nationale de la Recherche (France)

PROFESSIONAL WORK EXPERIENCE

Research Triangle Institute, Research Triangle Park, NC January 2008 – July 2008
Chemist I, Commercial Analytical Group

- Analytical Chemist for contract pharmaceutical stability and degradation testing. Project lead for new clients including method development, client communication, and result reporting in GLP environment.
- Analyst for product stability testing utilizing UPLC, HPLC, and GC-FID instrumentation techniques.

University of Iowa Hygienic Laboratory, Iowa City, IA April 2005 – August 2007
Chemist I, Environmental Organic Analysis Lab

- Principal Analyst for Drinking Water, Wastewater, and Soil for state compliance of EPA Safe Drinking Water Act (SDWA) and Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
- Principal Analyst for EPA Air Toxics Program employing cryo-enabled GC-FID MS. Coordinated sample collection and analysis and standard creation for Iowa DNR funded program.