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EDUCATION

2012/08 – 2017/12	Ph.D.	School of Marine and Atmospheric Sciences (SoMAS), Stony Brook Univ., NY, USA
2006/09 – 2008/07	M.S.	Institute of Oceanography, National Taiwan Univ., Taiwan
2002/09 – 2006/05	B.S.	Depart. of Earth Sciences, National Taiwan Normal Univ., Taiwan

EMPLOYMENT

2022/08 – present	Assistant Research Fellow	RCEC, Academia Sinica, Taiwan
2020/06 – 2022/06	Research Scientist	NYS Center for Clean Water Technology, NY, USA
2018/05 – 2020/05	Senior Research Specialist	NYS Center for Clean Water Technology, NY, USA
2018/01 – 2018/04	Postdoctoral Researcher	SoMAS, Stony Brook Univ., NY, USA

HONORS & AWARDS

2018	The Brinkhuis Award for the Best Dissertation, SoMAS, Stony Brook University
2012 – 2015	Taiwan MOE sponsorship for overseas study (教育部公費留考)
2008	Dean's award for outstanding student thesis, National Taiwan University

RESEARCH INTEREST

My research focuses on various chemical contaminants (e.g., methylmercury, 1,4-dioxane, and per- and polyfluoroalkyl substances) in freshwater and marine environments. I am interested in studying their (i) occurrence, transformation, and biogeochemical processes, (ii) interaction with aquatic organisms (e.g., from phytoplankton to apex predators), (iii) bioaccumulation/transfer in the aquatic food chain, and ultimately (iv) their fate in the water cycle in response to environmental changes.

I am also dedicated to developing (i) robust sample preparation/analytical methods for detecting/quantifying emerging contaminants that exist in complex sample matrices and (ii) novel treatment methods for removing persistent emerging contaminants in waters, evaluating how water quality parameters influence treatment performance, and investigating any possible formation of adverse byproducts.

PUBLICATIONS (*: corresponding author)

1. **Lee, C. -S.*,** Shipley O.N., Ye X., Fisher N.S., Gallagher A.J., Frisk M.G., Talwar B.S., Schneider E.V.C., Venkatesan A.K. (2024) Accumulation of per- and polyfluoroalkyl substances (PFAS) in coastal sharks from contrasting marine environments: The New York Bight and The Bahamas. *Environmental Science and Technology*, **in press.**
2. **Lee, C. -S.,** Venkatesan, A. K.* (2024). Cationic surfactant-assisted foam fractionation enhances the removal of short-chain perfluoroalkyl substances from impacted water. *Chemosphere*, 142614. https://doi.org/10.1016/j.chemosphere.2024.142614
3. Londhe, K., **Lee, C. -S.**, Grdanovska, S., Smolinski, R., Hamdan, N., McDonough, C., Cooper, C., Venkatesan, A. K.* (2024). Application of electron beam technology to decompose per-and polyfluoroalkyl substances in water. *Environmental Pollution*, 123770. https://doi.org/10.1016/j.envpol.2024.123770
4. **Lee, C. -S.**, Wang, M., Nanjappa, D., Lu, Y. T., Meliker, J., Clouston, S., ... & Venkatesan, A. K.* (2023). Monitoring of over-the-counter (OTC) and COVID-19 treatment drugs complement wastewater surveillance of SARS-CoV-2. J*ournal of Exposure Science & Environmental Epidemiology*, 1-9. https://doi.org/10.1038/s41370-023-00613-2
5. Crawford, L. M.*, Gelsleichter, J., Newton, A. L., Hoopes, L. A., **Lee, C. -S.**, Fisher, N. S., ... & McElroy, A. E. (2023). Associations between total mercury, trace minerals, and blood health markers in Northwest Atlantic white sharks (*Carcharodon carcharias*). *Marine pollution bulletin*, 195, 115533. https://doi.org/10.1016/j.marpolbul.2023.115533
6. **Lee, C. -S.**, K. Londhe, C. Cooper, S. Grdanovska, & A. K. Venkatesan*. (2023) Emerging investigator series: Low doses of electron beam irradiation effectively degrade 1, 4-dioxane in water within a few seconds. *Environmental Science: Water Research & Technology,* 9(9), 2226-2237. https://doi.org/10.1039/D3EW00111C
7. **Lee, C. -S.**, M. Wang, P. M. Clyde, X. Mao, B. J. Brownawell, A. K. Venkatesan*. (2023) 1, 4-Dioxane removal in nitrifying sand filters treating domestic wastewater: Influence of water matrix and microbial inhibitors. *Chemosphere*, 138304. https://doi.org/10.1016/j.chemosphere.2023.138304
8. Li, D., **C. -S. Lee**, Y. Zhang, R. Das, F. Akter, A. K. Venkatesan* & B. S. Hsiao*. (2023) Efficient removal of short-chain and long-chain PFAS by cationic nanocellulose. *Journal of Materials Chemistry A*. 11(18), 9868-9883. https://doi.org/10.1039/d3ta01851b
9. Huang, X., **C. -S. Lee**, K. Zhang, A. G. Alhamzani, & B. S. Hsiao*. (2023) Sodium Alginate–Aldehyde Cellulose Nanocrystal Composite Hydrogel for Doxycycline and Other Tetracycline Removal. *Nanomaterials*, 13(7), 1161. https://doi.org/10.3390/nano13071161
10. Tang, Y., M. Wang, **C. -S. Lee**, A. K. Venkatesan, X. Mao*. (2023) Characterization of 1, 4-dioxane degrading microbial community enriched from uncontaminated soil. *Applied Microbiology and Biotechnology*, 107, 955-969. https://doi.org/10.1007/s00253-023-12363-0
11. Doherty, A. C., **C. -S. Lee,** Q. Meng, Y. Sakano, A. E. Noble, K. A. Grant, ... & A. K.

Venkatesan*. (2022) Contribution of household and personal care products to 1, 4-dioxane contamination of drinking water. *Current Opinion in Environmental Science & Health*, 100414. https://doi.org/10.1016/j.coesh.2022.100414

12. Londhe, K., **C. -S. Lee,** C. A. McDonough, & A. K. Venkatesan*. (2022) The need for testing isomer profiles of perfluoroalkyl substances to evaluate treatment processes. *Environmental Science & Technology,* 56(22), 15207-15219. https://doi.org/10.1021/acs.est.2c05518
13. Young, C. S., **C. -S. Lee**, L. H. Sylvers, A. K. Venkatesan, & C. J. Gobler*. (2022) The invasive red seaweed, Dasysiphonia japonica, forms harmful algal blooms: Mortality in early life stage fish and bivalves and identification of putative toxins. *Harmful Algae*, 118, 102294. https://doi.org/10.1016/j.hal.2022.102294
14. Venkatesan, A. K.*, **C. -S. Lee**, and C. J. Gobler. (2022) Hydroxyl-radical based advanced oxidation processes can increase perfluoroalkyl substances beyond drinking water standards: Results from a pilot study. *Science of The Total Environment*, 157577. https://doi.org/10.1016/j.scitotenv.2022.157577
15. Ye, X., **C. -S. Lee**, O. N. Shipley, M. G. Frisk, and N. S. Fisher* (2021) Risk assessment for seafood consumers exposed to mercury and other trace elements in fish from Long Island, New York, USA. *Marine Pollution Bulletin,* 176: 113442. https://doi.org/10.1016/j.marpolbul.2022.113442
16. Tang, Y., **C. -S. Lee**, H. Walker, C. J. Gobler, O. Apul, A. K. Venkatesan, and X. Mao*. (2021) Effect of residual H_2O_2 on the removal of advanced oxidation byproducts by two types of granular activated carbon. *Journal of Environmental Chemical Engineering,* 9(6): 106838. https://doi.org/10.1016/j.jece.2021.106838
17. Li, D., K. Londhe, K. Chi, **C. -S. Lee**, A. K. Venkatesan*, and B. S. Hsiao*. (2021) Functionalized bio-adsorbents for removal of perfluoroalkyl substances: A perspective. *AWWA Water Science,* 3(6): e1258. https://doi.org/10.1002/aws2.1258
18. Clyde, P. M., **C. -S. Lee**, R. E. Price, A. K. Venkatesan*, and B. J. Brownawell*. (2021) Occurrence and removal of PPCPs from on-site wastewater using nitrogen removing biofilters. *Water Research,* 206: 117743. https://doi.org/10.1016/j.watres.2021.117743
19. Londe, K., **C. -S. Lee**, Y. Zhang, S. Grdanovska, T. Kroc, C. A. Cooper, A. K. Venkatesan*. (2021) Energy evaluation of electron beam treatment of perfluoroalkyl substances in water: a critical review. *Environmental Science and Technology: Engineering,* 1(5), 827-841. https://doi.org/10.1021/acsestengg.0c00222
20. **Lee, C. -S.,** C. Asato, M. Wang, X. Mao, C. J. Gobler, A. K. Venkatesan*. (2021) Removal of 1,4-dioxane during on-site wastewater treatment using nitrogen removing biofilters. *Science of the Total Environment,* 771, 144806. https://doi.org/10.1016/j.scitotenv.2020.144806
21. Shipley, O. N.*, **C. -S. Lee**, N. S. Fisher, J. K. Sternlicht, S. Kattan, E. Staaterman, N. Hammerschlag, A. J. Gallagher. (2021) Patterns of metal concentrations in coastal shark species from The Bahamas with a focus on a common reef predator, the Caribbean reef shark. *Scientific*

Report, 11(1), 1-11. https://doi.org/10.1038/s41598-020-79973-w

22. Ye, X, K. Rountos, **C. -S. Lee**, N. S. Fisher*. (2021) Effects of methylmercury on the early life stages of an estuarine forage fish using two different dietary sources. *Marine Environmental Research,* 164, 105240. https://doi.org/10.1016/j.marenvres.2020.105240
23. **Lee, C. -S.**, A. K. Venkatesan*, H. W. Walker, C. J. Gobler. (2020) Impact of groundwater quality and associated byproduct formation during UV/hydrogen peroxide treatment of 1,4-dioxane. *Water Research,* 173(15), 115534. https://doi.org/10.1016/j.watres.2020.115534
24. **Lee, C. -S**.*, and N. S. Fisher. (2019) Microbial generation of elemental mercury from dissolved methylmercury in seawater. *Limnology and oceanography,* 64(2), 679-693. https://doi.org/10.1002/lno.11068
25. Shipley, O. N.*, **C. -S. Lee**, N. S. Fisher, G. Burruss, M. G. Frisk, E. J. Brooks, Z. C. Zuckerman, A. D. Herrmann, D. J. Madigan. (2019) Trophodynamics and mercury bioaccumulation in reef and open-ocean fishes from The Bahamas with a focus on two teleost predators. *Marine Ecology Progress Series* 608: 221-232. https://doi.org/10.3354/meps12798
26. Thomas, D. M., **C. -S. Lee**, and N. S. Fisher*. (2018) Bioaccumulation and trophic transfer of ^{137}Cs in marine and freshwater plankton. *Chemosphere* 209: 599-607. https://doi.org/10.1016/j.chemosphere.2018.06.124
27. **Lee, C. -S**.*, and N. S. Fisher. (2017) Bioaccumulation of methylmercury in a marine diatom and the influence of dissolved organic matter. *Marine Chemistry* 197: 70-79. https://doi.org/10.1016/j.marchem.2017.09.005
28. **Lee, C. -S**.*, and N. S. Fisher. (2017) Bioaccumulation of methylmercury in a marine copepod. *Environmental Toxicology and Chemistry* 36(5): 1287-1293. https://doi.org/10.1002/etc.3660
29. **Lee, C. -S.***, M. E. Lutcavage, E. Chandler, D. J. Madigan, R. M. Cerrato, and N. S. Fisher. (2016) Declining mercury concentrations in bluefin tuna reflect reduced emissions to the North Atlantic Ocean. *Environmental Science and Technology* 50: 12825-12830. https://doi.org/10.1021/acs.est.6b04328
30. **Lee, C. -S.*** and N. S. Fisher. (2016) Methylmercury uptake by diverse marine phytoplankton. *Limnology and Oceanography* 61: 1626-1639. https://doi.org/10.1002/lno.10318
31. **Lee, C. -S**., C. -L. Wei*, L. -S. Wen, D. D. D. Sheu, and W. -H. Lee. (2013) Distribution and removal of silver and lead in the nearshore waters of western Taiwan. *Estuaries and Coasts* 36: 854-865. https://doi.org/10.1007/s12237-013-9588-1

Invited talks/Conference presentations

1. **Lee, C. -S.**, O.N. Shipley, X. Ye, A.J. Gallagher, M.G. Frisk, B.S. Talwar, E.V. Schneider, A.K. Venkatesan. "Accumulation of per- and polyfluoroalkyl substances (PFAS) by sharks from two contrasting habitats: New York Bight and The Bahamas". Goldschmidt 2023 Conference, Lyon, France, Jul 9-14, 2023

2. **Lee, C. -S.** "Per- and Polyfluoroalkyl Substances (PFAS) Testing Facility at the NYS Center for Clean Water Technology: Challenges in Detection and Water Treatment" NYS Center for Clean Water Technology Monthly Seminar Series. Dec 7, 2020 (virtual seminar)
3. **Lee, C. -S.** "Methylmercury bioaccumulation, transformation, and trophic transfer in marine food chains" Research Center for Environmental Changes, Academia Sinica, Taipei, Taiwan. Oct 21, 2020 (virtual seminar)
4. Venkatesan, A.K. and **Lee, C. -S.** "Poly- and Perfluoroalkyl Substances in Water: Challenges and Mitigating Strategies in Detection and Treatment" On-demand webcast hosted by LC-GC and Agilent Technologies. Mar 5, 2020
5. **Lee, C. -S.** "Methylmercury bioaccumulation, transformation, and trophic transfer in marine food chains" Department of Oceanography, National Sun Yat-sen University, Kaohsiung, Taiwan. Dec 16, 2019
6. **Lee, C. -S.** "Impact of groundwater quality parameters on 1,4-dioxane removal and associated byproducts formation during UV/hydrogen peroxide advanced oxidation process treatment" Research Center for Environmental Changes, Academia Sinica, Taipei, Taiwan. Dec 11, 2019
7. **Lee, C. -S.** "Impact of groundwater quality parameters on 1,4-dioxane removal and associated byproducts formation during UV/hydrogen peroxide advanced oxidation process treatment" Department of Civil Engineering, Stony Brook University, Stony Brook, NY. Oct 21, 2019
8. **Lee, C. -S.**, A. K. Venkatesan, H. W. Walker, C. J. Gobler. Impact of groundwater quality parameters on 1,4-dioxane removal and associated byproducts formation during UV/hydrogen peroxide advanced oxidation process treatment. (2019) ACS Fall 2019 National Meeting & Exposition, San Diego, CA (oral)
9. **Lee, C. -S.**, and N. S. Fisher. Microbial generation of elemental mercury from dissolved methylmercury in seawater. (2018) SETAC North America 39th Annual Meeting, Sacramento, CA (oral)
10. Crawford, L., G. Paterson, N. Dheilly, **C. -S. Lee**, N. S. Fisher, J. Olin, A. McElroy. Contaminant body burdens and molecular responses associated with dietary exposure to mercury and POPs in the little skate (Leucoraja erinacea). (2018) SETAC North America 39th Annual Meeting, Sacramento, CA (poster)
11. **Lee, C. -S.**, and N. S. Fisher. Elemental mercury production in seawater by coastal bacterial assemblages. (2017) Goldschmidt conference, Paris, France (oral).
12. **Lee, C. -S.**, and N. S. Fisher. Elemental mercury production in seawater by coastal bacterial assemblages. (2017) 13th International Conference on Mercury as a Global Pollutant, Providence, RI (oral).
13. **Lee, C. -S.**, and N. S. Fisher. Declining mercury concentrations in bluefin tuna. (2017) SUNY Graduate Research Conference, Saratoga Springs, NY (poster).
14. **Lee, C. -S.**, and N. S. Fisher. Methylmercury bioaccumulation, transformation, and trophic transfer in marine plankton assemblages. (2016) Ocean Sciences Meeting, New Orleans, LA

(poster).

15. **Lee, C. -S.**, and N. S. Fisher. Methyl mercury uptake by diverse marine phytoplankton and trophic transfer to zooplankton. (2014) AGU Fall Meeting, San Francisco, CA (oral).
16. **Lee, C. -S**., C. -K. Wang, L. -S. Wen. Distribution and perturbation of dissolved silver in western Pacific marginal seas: from head waters to the open ocean. (2012) Ocean Sciences Meeting, Salt Lake City, UT (poster).
17. Wen, L. -S, **C. -S. Lee**, Y. -C. Fong. Dynamics of dissolved, colloidal, and particulate phosphorous: A case study in DanShuei tributary-Estuary, northern Taiwan. (2011) AGU Fall Meeting, San Francisco CA (poster).
18. Wen, L. -S, C. -K. Wang, **C. -S. Lee**, C. -L. Wei, K. -T. Jiann, Determination of spatial variations of dissolved Ag in Pacific marginal seas by clean method. (2010) Ocean Science Meeting, Portland, OR (poster).

PROFESSIONAL SERVICE

Reviewer for Peer-review Journals

Nature Communication, PNAS, Environmental Science & Technology, Environmental Science & Technology Letters, Limnology and Oceanography, Marine Chemistry, Science of the Total Environment, Water Research, Chemosphere, Deep-sea Research, Environmental Toxicology & Chemistry, Harmful Algae, PloS One, One Earth (Cell Press), Journal of Plankton Research, Ecotoxicology, Environmental Science and Pollution Research, Journal of Fish Biology, Marine Pollution Bulletin, Journal of Hazardous Materials, Journal of Hazardous Materials Letters