

JIN Ling Nathanael

Assistant Professor

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Education

PhD, Environmental Toxicology, The University of Queensland, 2015

MPhil, Environmental Sciences, City University of Hong Kong, 2009

BSc (1st Hon), Environmental Science & Management, City University of Hong Kong, 2007

BSc, Environmental Science and Engineering, Fudan University (transferred to CityU after two years of study 2003-2005)

Professional Experience

2021.09 - present	Assistant Professor (Presidential Young Scholar)	Department of Civil and Environmental Engineering and Department of Health Technology and Informatics (Joint appointment), The Hong Kong Polytechnic University
2015.04 – 2021.08	Research Associate/Postdoctoral Fellow/Research Fellow/Research Assistant Professor	The Hong Kong Polytechnic University
2009.09 – 2011.01	Research Assistant	City University of Hong Kong
2008.02 – 2008.05	Visiting Student	National Institute of Advanced Industrial Science and Technology, Japan
2007.06 – 2007.08	Research Intern	University of California, Davis
2006.05 – 2006.07	Conservation Volunteer	Conservation Volunteers Australia

Statement of expertise

Nathanael is actively engaged in interdisciplinary research at the intersection of environmental chemistry, toxicology, microbiology, and data science, addressing critical challenges in planetary health. His research focuses on human health impacts of air pollution, wildlife health impacts of marine pollution, and ecohealth impacts of solid waste.

Nathanael's recent work on air pollution toxicity received recognition from *Nature*, where he contributed to an invited joint commentary on global disparities in the health impacts of air pollution. His study on the airborne transmission of antibiotic resistance genes was recognized as one of the best papers in *Environmental Science & Technology Letters* in 2018. He also led a pioneering study on the ecology and risks of the global plastisphere, which earned his team the Most Popular Paper Award (2020–2024) and the Best Paper Award (2024–2025) from *The Innovation*. This research further attracted attention from *Nature*, resulting in an invitation for

Nathanael and his team to write a commentary on the microbial risks associated with global plastic pollution. In recognition of his impactful contributions, Nathanael was named to the 2025 "40 Under 40 Recognition Program" by the American Academy of Environmental Engineers and Scientists.

Nathanael has previously served as an Editorial Board Member for *Environmental Toxicology and Chemistry* and as a Guest Editor for *Environmental Science & Technology*, where he co-organized a Special Issue on Urban Air Pollution and Human Health. Currently, he serves as an Editorial Board Member of *Environmental Science and Technology* and *ACS Environmental Au*, and as Youth Editor for *The Innovation*, and Guest Editor for *Environment International*, where he is co-organizing a Special Issue on Advanced Data-driven Approaches to Assessing Complex Health Risks of Environmental Pollutants under Climate Change. In 2024, he received the Outstanding Reviewer Award from *National Science Review*.

Honours & Awards

- *The Innovation* Best Paper Award (2024-2025), 2025
- 40 Under 40, American Academy of Environmental Engineers and Scientists, 2025
- *National Science Review* Outstanding Reviewer Award, 2024
- *The Innovation* Most Popular Paper Award (2020-2024), 2024
- *iMeta* Best Paper Award, 2023
- Faculty of Construction and Environment Dean's Award for Outstanding Research Funding, 2023
- Presidential Young Scholar, PolyU, 2022
- *Environmental Science and Technology Letters* Best Paper Award, 2018
- Society of Environmental Toxicology and Chemistry/Procter & Gamble Fellowship, 2014
- SETAC Australasia Student Travel Award, 2013
- Prime Minister's Australia Asia Endeavour Award, Australian Government, 2011-2014
- Dean's List, City University of Hong Kong, 2007
- Fang Brothers Whole Person Development Scholarship, City University of Hong Kong, 2007

Editorial Board Membership

Editorial Board Member of *Environmental Science and Technology*, 2025 – now

Guest Editor of *Environment International*, 2024-2025

Editorial Board Member of *ACS Environmental Au*, 2021 – now

Editorial Board Member of *The Innovation*, 2021 - now

Guest Editor of *Environmental Science and Technology*, 2021-2022

Editorial Board Member of *Environmental Toxicology and Chemistry*, 2018 – 2020

Funding

As (Co-)Principal Investigator (PI/Co-PI)

1. Deciphering the fungal nexus: Airborne β -lactam resistance in landfills and its implications for human health (HK\$ 1,462,251, 2026-2028, *Funded by Research Grants Council of Hong Kong General Research Fund, PI*)

2. Assessing plastic pollution-associated antimicrobial resistance risk (HK\$ 850,200, 2025-2027, *Funded by Research Grants Council of Hong Kong Junior Research Fellow Scheme, PI*)
3. AI-driven innovations in chemical safety: Protecting human health through safer consumer products (HK\$ 500,000, 2025-2029, *Donated by HuaJun Metal Products (Hong Kong) Co., Limited, PI*)
4. How urbanization alters airborne fungal communities and antifungal resistance as part of what humans breathe (HK\$ 1,005,833, 2025-2027, *Funded by Research Grants Council of Hong Kong General Research Fund, PI*)
5. Guangdong-Hong Kong-Macao Joint Laboratory for Environmental Pollution and Control with Chinese Academy of Sciences (CAS-GIG) (HK\$ 1,875,000, 2024-2028, *Funded by RGC Co-funding Mechanism on Joint Laboratories with the Chinese Academy of Sciences (CAS), Co-PI*)
6. Climate- and environment-conscious urban growth in the Guangdong-Hong Kong- Macau Greater Bay Area (GBA): solutions and co-benefits (HKD 3,548,582, 2023-2026, *Funded by Research Grants Council of Hong Kong Collaborative Research Fund, Co-PI*)
7. Unravelling the black box between air pollution and public health for transformative air quality management (HK\$ 44.5 million, 2023-2027, *Funded by Research Grants Council of Hong Kong Theme-based Research Scheme, Co-PI*)
8. Transmission of antimicrobial resistance from hotspot sources to occupational populations and urban communities (HK\$ 8,709,120, 2023-2026, *Funded by Research Grants Council of Hong Kong Collaborative Research Fund, Co-PI*)
9. Effects of urban airborne particulate matter and associated toxic components on pathogen receptor expression in human airway epithelial cells (HK\$ 802,220, 2023-2026, *Funded by Research Grants Council of Hong Kong General Research Fund, PI*)
10. Ecological threats of plastisphere in the Anthropocene (HK\$ 1,288,513, 2023-2026, *Funded by The Hong Kong Polytechnic University Distinguished Postdoctoral Fellowship Scheme, PI*)
11. Air pollution-induced immune impair and respiratory pathogen colonization (HK\$ 1,200,000, 2023-2025, *Funded by The Hong Kong Polytechnic University Research Institute of Sustainable Urban Development Joint Research Fund, PI*)
12. Establishing species-specific neuronal cell lines for bioanalytical assessment of contaminant cocktails in Chinese white dolphins and finless porpoises (HK\$ 300,000, 2022-2023, *State Key Laboratory of Marine Pollution Seed Collaborative Fund, PI*)
13. Understanding and managing the threats of toxic algae to the Chinese White Dolphin and Finless Porpoise in Hong Kong's southern and western waters (HKD 1,120,500.00, 2021-2024, *Hong Kong LNG Terminal Limited Marine Conservation Enhancement Fund, PI*)
14. Contribution of selected toxic components and associated sources to differential mixture effects of city-specific PM_{2.5} on human lung cells: How much of the iceberg have we seen? (HK\$ 579,972, 2021-2023, *Funded by Research Grants Council of Hong Kong, PI*)
15. *In vitro* toxic potencies of city-specific fine particulate matter: Contribution of targeted toxic components and their emission sources (RMB 240,000, 2021-2023 *Funded by National Natural Science Foundation of China Youth Fund, PI*)
16. Dissecting the toxicity drivers of pollutant mixture effects in marine mammals of the south China coast using species-specific cell lines (HK\$ 600,000, 2021-2022, *Funded by Hong Kong Branch of Southern Ocean Science and Engineering Guangdong Laboratory (Guangzhou), PI*)

17. Novel tools to assess combined effect of bioaccumulative chemicals in marine wildlife (USD 15,000, 2014-2015, *Funded by Society of Environmental Toxicology and Chemistry / Procter & Gamble, USA, Student PI*)
18. Development of novel screening tools to assess chemical-induced immunotoxicity in sea turtles (AUD 40,000, 2013-2015, *Funded by Sea World Research and Rescue Foundation, Inc., Australia, Student PI*)

As Co-Investigator (Co-I)

1. Risk assessment and surveillance of the transmission of foodborne antimicrobial resistance in Hong Kong (HK\$ 1,499,500, 2024-2027, *Funded by Health and Medical Research Fund, Co-I*)
2. Regional dissemination of antibiotic resistance genes: Processes and mechanisms (RMB 2.9 million, 2022-2026, *National Natural Science Foundation Major Program, Co-I*)
3. Provision of Services for Routine Surveillance of Antimicrobial Resistant Microorganisms in Food in Hong Kong (HKD 4.5 million, 2022-2023, *Food and Environmental Hygiene Department Contract Research, Co-I*)
4. A novel assessment platform to delineate transmission of antimicrobial resistance from seafood-related marine ecosystems to coastal population (HKD 1,100,000, 2020-2022, *Funded by Hong Kong Branch of Guangdong Southern Marine Science and Engineering Laboratory, The Hong Kong University of Science and Technology, Co-I*)
5. Zoonotic transmission of antimicrobial resistance from seafood-related marine ecosystems to the coastal population in the Greater Bay Area (HKD 2,100,000, 2020-2023, *Funded by State Key Laboratory of Marine Pollution, City University of Hong Kong, Co-I*)
6. Guangdong-Hong Kong-Macau Joint Laboratory of Environmental Pollution Processes and Control (RMB 3,000,000, 2020-2022, *Funded by Department of Science and Technology of Guangdong Province, China, Co-PI*)
7. Key technologies and applications for safe use of heavy metal-contaminated farmland (RMB 600,000, 2020-2022, *Funded by Department of Science and Technology of Guangdong Province, China, Co-I*)
8. Identifying the mixture effects and major toxicity drivers of ambient fine particulate matter: A comparative study of the Yangtze River Delta and Pearl River Delta regions (RMB 3,468,000, 2016-2019, *Funded by National Natural Science Foundation of China, Co-I*)

Publications (*corresponding author; #co-first author; Students and Staff underlined)

ORCID: 0000-0003-1267-7396; Web of Science: Citation = 4,130, H-index = 35; Google Scholar: Citation = 5,289, H-index of 37

Peer-reviewed journal articles

1. Liu X, Liang B, Yao S, Xiong A, Zhang X, Sun Y, Zhang L, Li C, Ruan Y, Yan M, Ho YW, Fang JKH, Wang B, Leusch F, Schlenk D, Liu W*, Leung KMY*, **Jin LN***. Dissecting the role of natural toxins and anthropogenic contaminants in mixture effects of seawater chemical cocktails on cetacean skin fibroblasts. *Environ. Sci. Technol.* 2025, 59, 14203–14213. **(Supplementary cover)**

2. Han Y, Cai J, Chen Y*, Zhang Y, **Jin LN***, Chen T, Li J, Zhang G, Chen J. Concurrent formation of low-maturity EC and BrC in biomass and coal burning: O-PAH as a precursor. *Environ. Sci. Technol.* 2025, 59, 12083–12095. (Supplementary cover)
3. Zhang L[#], Xiong A[#], Li C, Liu X, Zhang X, Gong S, Yan M, Qin X, Liu Y, Hu Z, Fang J, Duan H, Liu H, Chan LL, **Jin LN***. Ecological pattern of microalgal communities and associated risks in coastal ecosystems. *ISME Commun.* DOI: 10.1093/ismeco/ycaf109
4. Zheng H[#], Wu D[#], Wang S*, Li X, **Jin LN**, Zhao B, Li S, Sun Y, Dong Z, Wu Q, Chen X, Liu Y, Chen J, Tian H, Liu Q, Jiang J, Kan H, He K, He H, Chen C, Zhao J, Weichenthal S, Ji JS, Cohen A, Hao J, Li Q. Control of toxicity of fine particulate matter emissions in China. *Nature* 2025, 643, 404–411.
5. Cao X, Su J, Pan X, Zhang X, **Jin L**, Zhu Y. Metabolic Effects of Chronic Exposure to Environmentally Relevant Concentrations of *N*-(1,3-Dimethylbutyl)-*N'*-phenyl-*p*-phenylenediamine (6PPD) in Mice During Diet-Induced obesity progression *Food Chem. Toxicol.* 2025, 204, 115625.
6. Wang Y*, Li H, Tan F, **Jin LN**, Su J, Luo C. Root and foliar uptake, bidirectional translocation, subcellular distribution, and metabolism of tire wear particle-derived *p*-phenylenediamines and their quinones in Chinese cabbage and bok choy. *Environ. Pollut.* 2025, 382, 126737.
7. Yang S, Zhang X, **Jin LN**, Fang M, Gu AZ, Li D*, Chen J. Unveiling Phase-Dependent Genotoxicity of Organic Pollutants in Gaseous and Aqueous Forms. *Environ. Sci. Technol.* 59, 12048–12059.
8. Liao H, Wen C, Huang D, Liu C, Gao T, Du Q, Yang Q, **Jin L**, Ju F, Yuan MM, Tang X, Yu P*, Zhou S*, Alvarez PJ, Friman VP. Harnessing phage consortia to mitigate the soil antibiotic resistome by targeting keystone taxa *Streptomyces*. *Microbiome* 2025, 13, 1-20.
9. Li Q, Liu H, Liu L, **Jin LN**, Zheng Z, Liu Z, Ma T, Xin J, Zhou H, Huang D, Zhai Y, Liu M. Identifying key factors influencing cook's thermal comfort in Chinese-style residential kitchen based on typical cooking methods. *J. Build. Eng.* 2025, 108, 112944
10. Zhang X, Lu B, **Jin LN**, Yang S, Wang C, Tai J, Li D*, Chen J. Emission Dynamics and Public Health Implications of Airborne Pathogens and Antimicrobial Resistance from Urban Waste Collection Facilities. *Environ. Sci. Technol.* 59, 8060–8072
11. Yu X, Yao R, Yao R, Jin X, Huang J, Liang Q, **Jin LN**, Sun J*. Mechanistic understanding of the toxic effects of tri-*n*-butyl phosphate (TnBP) and tricresyl phosphate (TCP) to *Escherichia coli*: Evidence from alterations in biomarker. *Comp. Biochem. Physiol. C Toxicol. Pharmacol.* 2025, 295, 110211.
12. Song X, Wu D, **Jin LN**, Xu Y, Chen X, Li Q*. Aerosol Toxicokinetics: A framework for unraveling toxicological dynamics from air to the body. *Environ. Sci. Technol.* 59, 6379–6386.
13. Liu M, Wang S, Zhou H, Liu H*, Huang D, Liu L, Li Q, Chen H, Lei Y, **Jin LN**, Zhang W. Thermal environment driving specific microbial species to form the visible biofilms on the UNESCO World Heritage Dazu Rock Carvings. *Environ. Res.* 2025, 276, 121510.
14. Yang S, Shao Z, **Jin LN**, Chen L, Zhang X, Fang M, Li D*, Chen J. Distinct baseline toxicity of volatile organic compounds (VOCs) in gaseous and liquid phases: Mixture effects and potential molecular mechanisms. *J. Hazard. Mater.* 485, 136890.
15. Li Q, Liu H*, Liu L, **Jin L**, Wang S, Ma T, Zhai Y, Xin J, Miao X, Fan Q, Feng C, Liu M. Source-pathway-sink framework to guide surface bacterial risk assessment and control in residential bathroom. *Build. Environ.* 2025, 270, 112541.

16. Ai T, Yu M, Dai Y, Yao R, **Jin LN**, Yu Y, Qiu X, Huang P, Zhu X, Sun J*. Translocation, Transformation, and Phytotoxicity of Sulfadiazine and N 4-Acetylsulfadiazine in Rice Plants. *J. Agric. Food Chem.* 2025, 73, 5067–5078.
17. Bai D, Chen T*, Xun J, Ma C, Luo H, Yang H, Cao C, Cao X, Cui J, Deng YP, Deng Z, Dong W, Dong W, Du J, Fang Q, Fang W, Fang Y, Fu F, Fu M, Fu YT, Gao H, Ge J, Gong Q, Gu L, Peng G, Guo Y, Hai T, Liu H, He J, He ZY, Hou H, Huang C, Ji S, Jiang C, Jiang GL, Jiang L, **Jin LN**, Kan Y, Kang D, Kou J, Lam KL, Li C, Li C, Li F, Li L, Li M, Li X, Li Ye, Li ZT, Liang J, Lin Y, Liu C, Liu D, Liu F, Liu J, Liu T, Liu T, Liu X, Liu Y, Liu B, Liu M, Lou W, Luan Y, Luo Y, Lv H, Ma T, Mai Z, Mo J, Niu D, Pan Z, Qi H, Shi Z, Song C, Sun F, Sun Y, Tian S, Wan X, Wang G, Wang H, Wang H, Wang H, Wang J, Wang J, Wang K, Wang L, Wang SK, Wang X, Wang Y, Xiao Z, Xing H, Xu Y, Yan S, Yang L, Yang S, Yang Y, Yao X, Yousuf S, Yu H, Lei Y, Yuan Z, Zeng M, Zhang C, Zhang C, Zhang H, Zhang J, Zhang N, Zhang T, Zhang YB, Zhang Y, Zhang Z, Zhou M, Zhou Y, Zhu C, Zhu L, Zhu Y, Zhu Z, Zou H, Zuo A, Dong W, Wen T*, Chen S*, Li G*, Gao Y*, Liu YX*. EasyMetagenome: A user-friendly and flexible pipeline for shotgun metagenomic analysis in microbiome research. *iMeta* 2025, 4, e70001.
18. Wu H, Yu M, Huang J, Zhang Q, Yao R, Liu H, Yu X, **Jin L**, Sun J*. Pollution characteristics and risk assessment of organophosphate esters in mollusks along the coast of South China. *Mar. Pollut. Bull.* 210, 117317.
19. Shi J, Tanentzap AJ, Sun Y, Wang J, Xing B, Rillig MC, Li C, **Jin L**, Wang F, Adyel, TM, Shang J, Wang X, Wang J*. Microplastics Generate Less Mineral Protection of Soil Carbon and More CO₂ Emissions. *Adv. Sci.* 2025, 12, 2409585.
20. Rillig MC*, Li C, **Jin LN**, Kim SW. Understanding the soil plastisphere and its environmental impacts. *One Earth* 7, 2095-2098.
21. Luo M*, Yang W, Bai L, Zhang L, Huang JW, Cao Y, Xie Y, Tong L, Zhang H, Yu L, Zhou LW, Shi Y, Yu P, Wang Z, Yuan Z, Zhang P, Zhang Y, Ju F, Zhang H, Wang F, Cui Y, Zhang J, Jia G, Wan D, Ruan C, Zeng Y, Wu P, Gao Z, Zhao W, Xu Y, Yu G, Tian C, **Jin LN**, Dai J*, Xia B*, Sun B*, Chen F*, Gao YZ*, Wang H*, Wang B*, Zhang D*, Cao X*, Wang H*, Huang T*. Artificial intelligence for life sciences: A comprehensive guide and future trends. *Innov. Life* 2025, 2, 100105.
22. He T, Xie J, **Jin L**, Zhao J, Zhang X, Liu H, Li X. Seasonal dynamics of the phage-bacterium linkage and associated antibiotic resistome in airborne PM_{2.5} of urban areas. *Environ. Int.* 2024, 194, 109155.
23. Zhang Q, Yu M, Liu H, Tang J, Yu X, Wu H, **Jin L**, Sun J*. Efficient degradation of tetracycline by peroxymonosulfate activated with Ni-Co bimetallic oxide derived from bimetallic oxalate. *Toxics* 2024, 12, 816.
24. Li C, Liu J, Rillig MC, Bank MS, Fantke P, Zhu D, Zhu YG, **Jin LN***. What harmful microbes are lurking in the world's 7 billion tonnes of plastic waste? *Nature* 634, 30-32. (Invited Comment)
25. Jin X, Yao R, Yao S, Yu X, Tang J, Huang J, Yao R, **Jin L**, Liang Q, Sun J*. Metabolic perturbation and oxidative damage induced by tris(1,3-dichloro-2-propyl) phosphate (TDCIPP) and tris(2-ethylhexyl) phosphate (TEHP) on Escherichia coli through integrative analyses of metabolome. *Ecotoxicol. Environ. Saf.* 2024, 283, 116797.
26. Adomako MO, **Jin L**, Li C, Liu J, Adu D, Seshie VI, Yu FH*. Mechanisms underpinning microplastic effects on the natural climate solutions of wetland ecosystems. *Sci. Total Environ.* 2024, 954, 176491

27. Yang S, Fang M, **Jin L**, Shao Z, Zhang X, Han Y, Du B, Yang D, Gu AZ, Chen Y, Li D*, Chen J. In situ and rapid toxicity assessment of air pollutions by self-assembly passive colonization hydrogel. *Environ. Sci. Technol.* DOI: 10.1021/acs.est.4c04807
28. Rillig MC*, Li C, del Rio AR, Zhu YG, **Jin L**. Elevated levels of antibiotic resistance genes as a factor of human-caused global environmental change. *Glob. Change Biol.* 2024, 30, e17419.
29. Li C, Li X, Bank MS, Dong T, Fang JKH, Leusch FDL, Rillig MC, Wang J, Wang L, Xia Y, Xu EX, Yang Y, Zhang C, Zhu D, Liu J*, **Jin L***. The “microplastome” – A holistic perspective to capture the real-world ecology of microplastics. *Environ. Sci. Technol.* 2024, 58, 4060–4069. (Supplementary cover; ESI Top 1% Highly Cited Paper)
30. Li C, Gillings MR, Zhang C, Chen Q, Zhu D, Wang J, Zhao K, Xu Q, Leung PHM, Li X, Liu J*, **Jin L***. Ecology and risks of the global plastisphere as a newly expanding microbial habitat. *The Innovation* 2024, 5, 100543. (Featured article; Most Popular Paper Award)
31. Zhu X, Yu Y, Meng W, Huang J, Su G, Zhong Y, Yu X, Sun J, **Jin L**, Peng P, Zhu L. Aerobic microbial transformation of fluorinated liquid crystal monomer: New pathways and mechanism. *Environ. Sci. Technol.* 2024, 58, 510–521.
32. Liu L, Xin J, Liu Z, Zeng W, Li Q, **Jin L**, You R, Liu M, Liu H. Are wearable local cooling devices effective in Chinese residential kitchens during hot summer? *Build. Environ.* 2024, 257, 111532.
33. Leung RKL, **Jin L**, Kong HK, Su C, Ren X, Liu X, Wang Y, Hu M, Kwok KWH, Wu RSS, Chui APY*, Fang JKH*. Development of a multiple-biomarker approach using the green-lipped mussel *Perna viridis* for marine pollution monitoring: a case study in Victoria Harbour, Hong Kong. *Mar. Pollut. Bull.* 2024, 201, 116086.
34. Lv B, Jiang C, Han Y, Wu D, **Jin L**, Zhu G, An T, Shi J. Diverse bacterial hosts and potential risk of antibiotic resistomes in ship ballast water revealed by metagenomic binning. *Environ. Res.* 2024, 206, 116684.
35. Li JY, Yao S, Mo Z, Miao Y, Chen Y, He W, **Jin L**, Tang W. Submerged plant-biochar composite system exhibits effective control over residual organic pollutants in the benthic organisms of aquaculture ponds. *Environ. Pollut.* 2024, 351, 124078.
36. Li Q, Yao S, Wen H, Li W, **Jin L**, Huang X. Improving lead phytoremediation using endophytic bacteria isolated from the pioneer plant *Ageratina adenophora* (Spreng.) from a mining area. *Toxics* 2024, 12, 291.
37. Luo W, Yao S, Huang J, Wu H, Zhou H, Du M, Jin L, Sun J. Distribution and risk assessment of organophosphate esters in agricultural soils and plants in the coastal areas of South China. *Toxics* 2024, 12, 286.
38. Ai T, Yao S, Yu Y, Peng K, **Jin L**, Zhu X, Zhou H, Huang J, Sun J, Zhu L. Transformation process and phytotoxicity of sulfamethoxazole and N4-acetyl-sulfamethoxazole in rice. *Sci. Total Environ.* 2024, 918, 170857.
39. Leung RKL, Chui APY, Liu X, Lee HW, Leung MML, Wang Y, Hu M, Kwok KWH, Wu RSS, **Jin L**, Kong HK, Fang JKH*. Bioaccumulation of pollutants in the green-lipped mussel *Perna viridis*: Assessing pollution abatement in Victoria Harbour and its adjacent aquaculture area, Hong Kong, and the minimal human health risks from mussel consumption. *Mar. Pollut. Bull.* 2024, 201, 116086.
40. Huang Z, Haile K, Gedefaw Lealem, Lau BWM, **Jin L**, Yip SP*, Huang CL*. Blood biomarkers as prognostic indicators for neurological injury in COVID-19 patients: A systematic review and meta-analysis. *Int. J. Mol. Sci.* 2023, 24, 15738.

41. Wu D, Xie J, Liu Y, **Jin L**, Li G, An T. Metagenomic and machine learning meta-analyses characterize airborne resistome features and their hosts in China megacities. *Environ. Sci. Technol.* 2023, 57, 16414–16423.
42. Fang R, Chen T, Han Z, Ji W, Bai Y, Zheng Z, Su Y, **Jin L**, Xie B, Wu D. From air to airway: Dynamics and risk of inhalable bacteria in municipal solid waste treatment systems. *J. Hazard. Mater.* 2023, 460, 132407.
43. Wu D, Zheng H, Li Q, Wang S, Zhao B, **Jin L**, Lyu R, Li S, Liu Y, Chen X, Zhang F, Wu Q, Liu T, Jiang J, Wang L, Li X, Chen J, Hao J. Achieving health-oriented air pollution control requires integrating unequal toxicities of industrial particles. *Nat. Commun.* 2023, 14, 6491.
44. Xiao X, Liu R, Yu Y, Zhang Z, Knibbs LD, Jalaludin B, Morawska L, Dharmage SC, Heinrich J, Papatheodorou S, Guo Y, Xu Y, **Jin L**, Guo Y, Yue W, Yao J, Zhang Y, Wang C, Gao S, Zhang E, Su S, Zhu T, Dong G*, Gao M*, Yin C*. Evidence of interactive effects of late-pregnancy exposure to air pollution and extreme temperature on preterm birth in China: a nationwide study. *Environ. Res. Lett.* 2023, 18, 094017.
45. Xing HH, Yu XL, Sun JT*, Lu GN, Zhu MF, Liang JH, **Jin L**, Zhu LZ. Interaction between phthalate ester and rice plants: Novel transformation pathways and metabolic-network perturbations. *Environ. Sci. Technol.* 2023, 57, 8870–8882.
46. Yu YY, Huang JH, **Jin L**, Yu M, Yu XL, Zhu XF, Sun JT*, Zhu LZ. Translocation and metabolism of tricresyl phosphate in rice and microbiome system: Isomer-specific processes and overlooked metabolites. *Environ. Int.* 2023, 172, 107793.
47. Yu Y, Yu X, Zhang D, **Jin L**, Huang J, Zhu X, Sun JT*, Yu M, Zhu LZ. Biotransformation of organophosphate esters by rice and rhizosphere microbiome: Multiple metabolic pathways, mechanism, and toxicity assessment. *Environ. Sci. Technol.* 2023, DOI: 10.1021/acs.est.2c07796
48. Li C, **Jin L**, Zhang C, Li S, Zhou T, Hua Z, Wang L, Ji S, Wang Y, Gan Y, Liu J*. Destabilized microbial networks with distinct performances of abundant and rare biospheres in maintaining networks under increasing salinity stress. *iMeta* 2023, 2, e79.
49. He TT[#], **Jin L**[#], Li XD* On the triad of air PM pollution, pathogenic bioaerosols, and lower respiratory infection. *Environ. Geochem. Health* 2023, 45, 1067-1077. (Invited review)
50. Zhao J, **Jin L**, Wu D, Xie JW, Li J, Fu XW, Cong ZY, Fu PQ, Zhang Y, Luo XS, Feng XB, Zhang G, Tiedje JM*, Li XD*. Global airborne bacterial community—interactions with Earth’s microbiomes and anthropogenic activities. *Proc. Natl. Acad. Sci. U.S.A.* 2022, 119, e2204465119.
51. **Jin L**, Pruden A, Boehm A, Alvarez PJJ, Raskin L, Kohn T, Li XD*. Integrating environmental dimensions of “One Health” to combat antimicrobial resistance: Essential research needs. *Environ. Sci. Technol.* 2022, 56, 14871–14874.
52. Chen YQ, Su JR, Zhao HY, Li JY*, Wang Q, Yin J, **Jin L**. In-situ biochar amendment mitigates dietary risks of heavy metals and PAHs in aquaculture products. *Environ. Pollut.* 2022, 308, 119615.
53. Yu YY, Mo WT, Zhu XF, Yu XL, Sun JT*, Deng FC, **Jin L**, Yin H, Zhu LZ. Biodegradation of tricresyl phosphates isomers by a novel microbial consortium and the toxicity evaluation of its major products. *Sci. Total Environ.* 2022, 828, 154415.
54. Wu D, **Jin L**, Xie JW, Liu H, Zhao J, Ye D*, Li XD* Inhalable antibiotic resistomes emitted from hospitals: Metagenomic insights into bacterial hosts, clinical relevance, and environmental risks. *Microbiome* 2022, 10, 19.

55. Xie JW, **Jin L**, Wu D, Pruden A, Li XD* Inhalable antibiotic resistome from wastewater treatment plants to urban areas: Bacterial hosts, dissemination risks, and source contributions. *Environ. Sci. Technol.* 2022, 56, 7040–7051
56. **Jin L**, Xie JW, He TT, Wu D, Li XD* Airborne transmission as an integral environmental dimension of antimicrobial resistance through the “One Health” lens. *Crit. Rev. Environ. Sci. Technol.* 2022, 52, 4172–4193. (Invited review)
57. Wu D[#], Zheng HT[#], Li Q*, **Jin L**, Lyu R, Ding X, Huo YQ, Zhao B, Jiang JK, Chen JM, Li XD*, Wang SX*. Toxic potency-adjusted control of air pollution for solidfuel combustion. *Nat. Energy.* 2022, 7, 194–202.
58. He TT[#], **Jin L**[#], Xie JW, Yue SY, Fu PQ, Li XD* Intracellular and extracellular antibiotic resistance genes in airborne PM_{2.5} for respiratory exposure in urban areas. *Environ. Sci. Technol. Lett.* 2021, 8, 128–134. (Supplementary cover)
59. Zhao Z, Luo XS*, Jing Y, Li H, Pang Y, Wu L, Chen Q, **Jin L**. In vitro assessments of bioaccessibility and bioavailability of PM_{2.5} trace metals in respiratory and digestive systems and their oxidative potential. *J. Hazard. Mater.* 2021, 409, 124638
60. Li JY, Zhang L, Wang Q*, Xu J, Yin J, Chen Y, Gong Y, Kelly BC, **Jin L**. Applicability of equilibrium sampling in informing tissue residues and dietary risks of legacy and current-use organic chemicals in aquaculture. *Environ. Toxicol. Chem.* 2021, 40, 79-87.12.
61. Sun JT, **Jin L**, He TT, Wei Z, Liu X, Zhu LZ*, Li XD*. 2020. Antibiotic resistance genes (ARGs) in agricultural soils from the Yangtze River Delta, China. *Sci. Total Environ.* 2020, 740, 140001.
62. Xie JW, **Jin L**, Cui JL, Luo XS, Li J, Zhang G, Li XD*. Health risk-oriented source apportionment of PM_{2.5}-associated trace metals. *Environ. Pollut.* 2020, 262, 114655.
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69. Xie JW, **Jin L**, He TT, Chen BW, Luo XS, Li J, Fu PQ, Feng BH, Huang W, Li XD*. Bacteria and antibiotic resistance genes (ARGs) in PM_{2.5} across China: Implications for human exposure. *Environ. Sci. Technol.* 2019, 53, 963-972.
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75. Chen Q, Luo XS, Chen Y, Zhao Z, Hong Y, Pang Y, Huang W, Wang Y, **Jin L**. Seasonally varied cytotoxicity of organic components in PM_{2.5} from urban and industrial areas of a Chinese megacity. *Chemosphere* 2019, 230, 424–431.
76. Xie JW[#], **Jin L[#]**, Luo XS, Zhao Z, Li XD*. Seasonal disparities of airborne bacteria and associated antibiotic resistance genes in PM_{2.5} between urban and rural sites. *Environ. Sci. Technol. Lett.* 2018, 5: 74–79. **(Best Paper Award in 2018)**
77. Luo XS*, Zhao Z, Xie JW, Luo J, Chen Y, Li HB, **Jin L**. Pulmonary bioaccessibility of trace metals in PM_{2.5} from different megacities simulated by lung fluid extraction and DGT method. *Chemosphere* 2018, 218: 915–921.
78. Chen Y, Luo XS*, Zhao Z, Chen Q, Wu D, Sun X, Wu LC, **Jin L**. Summer-winter differences of PM_{2.5} cytotoxicity to human epithelial cells (A549) and the roles of transition metals. *Ecotoxicol. Environ. Saf.* 2018, 165:505–509.
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81. Li JY, Shi WX, Li ZH, Chen YQ, Shao L, **Jin L***. Equilibrium sampling informs seafood tissue residue and remediation measures for pyrethroid insecticides in mariculture. *Sci. Total Environ.* 2018, 616–617: 639–646.
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90. Li JY, Cui Y, Su L, Chen YQ, **Jin L***. Polycyclic aromatic hydrocarbons in the largest deepwater port of East China Sea: impact of port construction and operation. *Environ. Sci. Pollut. Res.* 2015, 22: 12355-12365.
91. Li J, Yu N, Zhang B, **Jin L**, Li M, Hu M, Zhang X, Wei S*, Yu HX*. Occurrence of organophosphate flame retardants in drinking water from China. *Water Res.* 2014, 54: 53-61.
92. Li JY*, Tang JYM, **Jin L**, Escher BI. Understanding bioavailability and toxicity of sediment-associated contaminants by combining passive sampling with in vitro bioassays in an urban river catchment. *Environ. Toxicol. Chem.* 2013, 32: 2888-2896.
93. **Jin L***, Gaus C, van Mourik L, Escher BI. Applicability of passive sampling to bioanalytical screening of bioaccumulative chemicals in marine wildlife. *Environ. Sci. Technol.* 2013, 47: 7982-7988.
94. Leung HW, **Jin L**, Wei S, Tsui MMP, Zhou BS, Jiao L, Cheung PK, Chun YK, Murphy MB*, Lam PKS*. Pharmaceuticals in tap water: Human health risk assessment and proposed monitoring framework in China. *Environ. Health Perspect.* 2013, 121: 839-846.
95. Chan WH, Mak YL, Wu JJ, **Jin L**, Sit WH, Lam JCW, de Mitcheson S, Chan LL, Lam PKS, Murphy MB*. Spatial distribution of ciguateric fish in Republic of Kiribati. *Chemosphere* 2011, 84: 117-123.
96. Mak YL, Taniyasu S, Yeung LWY, Lu G, **Jin L**, Yang Y, Lam PKS*, Kannan K, Yamashita N*. Perfluorinated compounds in tap water from China and several other countries. *Environ. Sci. Technol.* 2009, 43: 4824-4829.

Editorials

1. **Jin L**, Li XD*. Materials Science in the Quest for Sustainability. *ACS Environ. Au* 2024, 4, 54-55.
2. **Jin L**, Apte JS, Miller SL, Wang SX, Tao S, Jiang GB, Li XD*. Global endeavors to address the health effects of urban air pollution. *Environ. Sci. Technol.* 2022, 56, 6793-6798.
3. **Jin L**, Li XD*. *ACS Environmental Au*—Gold Open Access toward a Greener Future. *ACS Environ. Au* 2022, 2, 74-76.

Book chapters

1. **Jin L**, Jiang GB, Li XD*. 2020. Transforming Environmental Chemistry and Toxicology to Meet the Anthropocene Sustainability Challenges Beyond Silent Spring. (eds, GB Jiang, XD Li) *A New Paradigm for Environmental Chemistry and Toxicology*, Springer Nature, Singapore. pp 263-276.

2. **Jin L**, Gaus C, Escher BI*. **2015**. Bioanalytical approaches to understanding the toxicological implications of mixtures of persistent organic pollutants in marine wildlife. (ed., E.Y. Zeng) Persistent Organic Pollutants (POPs): Analytical Techniques, Environmental Fate and Biological Effects. Elsevier, UK. pp 650.
3. **Jin L**, Murphy MB, Lam JCW, Lam PKS*, **2011**, Use of bioassays in Environmental Monitoring (eds, CX Wang, LZ Zhu, GB Jiang) Environmental Chemistry, Science Press, Beijing, China. (In Chinese)
4. **Jin L**, Lam JCW, Murphy MB, Lam PKS*. **2011**. Temporal trends of polybrominated diphenyl ethers and hexabromocyclododecanes in marine mammals with special reference to Hong Kong, South China. (eds., B.G. Loganathan and P.K.S. Lam) Global Contamination Trends of Persistent Organic Chemicals. Taylor & Francis, Washington DC.
5. Murphy MB, **Jin L**, Lam PKS*. **2010**. Temporal trends of organochlorines and trace elements in marine mammals from Hong Kong. (eds., T. Isobe, K. Nomiyama, A. Subramanian and S. Tanabe) Interdisciplinary studies on environmental Chemistry – Environmental Specimen Bank. TERRAPUB, Japan.

Technical reports

1. Gaus C, Grant S, **Jin NL**, Goot K, Chen L, Villa AC, Neugebauer F, Qi L, Limpus C. **2012**. Haematology, blood chemistry and environmental contaminants in green turtle blood from the Gladstone Port, Report to: Gladstone Ports Corporation Limited and Department of Environment and Resource Management.
2. Poulsen A, Leusch F, Goodwin M, Tang J, Maylin E, **Jin L**, Escher BI. **2011**. Development of bio-analytical techniques to assess the potential human health impacts of recycled water. Part A: Literature review of in vitro bioassays for assessing adverse effects of trace organic pollutants in water. Report number: WateReuse-10-07, Affiliation: WateReuse Research Foundation.

Conference & Symposium Organisation

1. Session Chair, Session on Early Warning and Control of Bioaerosols, The 9th National Bioaerosol Conference, 21-23 March 2025
2. Session Chair, Session on Environmental Sustainability and Ecological Management, Global Chinese Environmental Protection Conference 2024, 24-27 May 2024
3. Session Convener, Session on Impacts of Microbe-Pollutant Interplay in the Environment, The 9th Youth Forum on Earth Sciences, 17-20 May 2024
4. Organizing committee, The 1st International Conference on Bacteria and Global Health, 18-20 January 2023
5. Co-chair, Training Session on Pollution Assessment and Management of East Asian Sea Congress 2021, 26 November 2021
6. Organising Committee and Session Chair, The 1st International Symposium on Marine Science and Engineering for Young Scientists and Postgraduates, 12-14 July 2021

Presentations

Invited Talks & Lectures

1. *“One Health”-oriented research on chemical-microbial interplay in the environment, Hunan Agricultural University, 13 July 2025*

2. *“One Health”-oriented research on chemical-microbial interplay in the environment*, Shantou University, 21 October 2024
3. *Identifying low-concentration but high-potency toxic components in PM_{2.5}*. ABaCAS 2024, Shanghai, 20-22 September 2024.
4. *“One Health”-oriented research on chemical-microbial interplay in the environment*. Institute of Geochemistry Chinese Academy of Sciences, 9 July 2024.
5. *Airborne transmission as an integral environmental dimension of antimicrobial resistance through the “One Health” lens*. The 1st International Conference on Bacteria and Global Health, Shenzhen, China, 20 January 2024.
6. *Anthropogenic impacts on coastal bacteriome and antibiotic resistome*. 10th International Conference on Marine Pollution and Ecotoxicology, Hong Kong, 6 January 2024.
7. *“One Health”-oriented research on chemical-microbial interplay in the environment*. Southern University of Science and Technology, 8 January 2024.
8. *Quantitative contribution of legacy and emerging pollutants to mixture effects in marine and atmospheric environments*. Chongqing University, 27 December 2023
9. *“One Health”-oriented research on chemical-microbial interplay in the environment*. Southwest University, China, 26 December 2023
10. *Microbial ecology and risks of the global plastisphere*. Yunnan University, 15 December 2023
11. *Contribution of endotoxins to PM_{2.5} in vitro bioactivities*. University of Rostock, Germany, 6 December 2023
12. *Dissecting the toxic components driving the in vitro toxicity of biomass burning aerosols*. The International Expert Workshop on Volatile Organic Compounds 2023, Hong Kong, 29 November 2023
13. *“Clean Air Education” lecture to secondary students from St Francis Xavier’s School Tsuen Wan*, The Hong Kong Polytechnic University, Hong Kong, 22 November 2023
14. *Community structure and source tracking of coastal airborne bacteria and fungi*. 11th National Conference on Environmental Chemistry, Wuhan, China, 20 November 2023
15. *Air pollution, pathogenic bioaerosols, and respiratory infection*. 11th National Conference on Indoor Environment and Health, Hohhot, China, 17 June 2023
16. *Identifying major toxicity drivers in the coastal habitat of endangered marine megafauna using species-specific cells*. East Asia Marine Cooperation Platform Qingdao Forum, Qingdao, China, June 2023
17. *Airborne transmission of antimicrobial resistance*. 2022 Annual Meeting of Division of Atmospheric Environment, Chinese Society of Environmental Sciences, 22 November 2022
18. *Airborne transmission of antimicrobial resistance*. Chongqing University, 14 October 2022
19. *Air pollution, pathogenic bioaerosols, and respiratory infection*. East China Normal University, 20 September 2022
20. *Implications of antibiotic resistomes in mariculture for coastal environmental quality and seafood safety*. 1st International Academic Forum on Marine Environmental Pollution Prevention and Marine Ecological Civilization Construction, Shanghai, 5 December 2021
21. *Toxicity assessment of chemical mixtures*. Training Session on Pollution Assessment and Management of East Asian Sea Congress 2021, Cambodia, 26 November 2021
22. *Advancing bioanalytical approaches to understanding health impacts of chemical mixtures in marine wildlife*. The 1st International Symposium on Marine Science and Engineering for Young Scientists and Postgraduates, Hong Kong, 12 July 2021

23. *Emerging approaches to understanding health impacts of pollutant cocktails in marine mammals*. 2021 International Cetacean Symposium, Hong Kong, 11 June 2021
24. *Hydrophobic Organic Contaminants: Application of Passive Sampling and Assessment of Mixture Toxicity*. Shanghai Ocean University, 10 April 2015

Selected Conference Presentations

1. Society of Environmental Toxicology and Chemistry (SETAC) Asia Pacific 14th Biennial Meeting. Tianjin, China, September 2024.
Less is more: Challenges in identifying low-concentration but high-potency toxic components in airborne particulate matter pollution [Oral]
2. The 11th National Conference on Environmental Chemistry. Wuhan, China, November 2023
Identifying major toxicity drivers in the waters of the Indo-Pacific finless porpoise using species-specific cells [Oral]
Implications of antibiotic resistomes in mariculture for coastal environmental quality and seafood safety [Oral]
3. The 8th National Conference on Ecotoxicology, Shaoxing, China, October 2023.
Identifying major toxicity drivers in the waters of the Indo-Pacific finless porpoise using species-specific cells [Oral]
4. National Conference on Environmental Chemistry, Tianjin, China, August 2019
Contribution of metals, PAHs and endotoxins to PM_{2.5}-induced oxidative stress [Oral]
5. International High-Level Forum on Toxicology and Health of Air Pollution, Beijing, China, October 2018
Airborne bacteria and associated antibiotic resistance genes (ARGs) in PM_{2.5} across China [Poster]
6. National Conference on Environmental Chemistry, Hangzhou, China, October 2017
Contribution of toxic components to PM_{2.5}-induced oxidative stress in human lung cells [Oral]
7. Gordon Research Conference on Marine Molecular Ecology, Hong Kong, August 2015
Molecular approaches to assessing the biological cycling and mixture effects of chemical stressors in the marine ecosystem [Poster]
8. International Conference on Environmental Specimen Banks, Shanghai, China, October 2013
Novel tools to facilitate effect screening of bioaccumulative chemicals in marine wildlife archives [Oral]
9. SETAC Australasia, Melbourne, Australia, October 2013
Toxic potential of chemical cocktails in dugongs: A decade-long story [Oral]
10. International Symposium on Halogenated Persistent Organic Pollutants (DIOXIN), Cairns, Australia, August 2012
Testing the applicability of passive sampling to chemical exposure and effect screening in marine wildlife [Oral]
11. SETAC Asia Pacific Annual Meeting, Guangzhou, China, 4–7 June 2010
Endocrine-disrupting activity and neurotoxic effect of 4-methylbenzylidene-camphor, a common sunscreen ingredient [Oral]
12. Copenhagen Workshop on Endocrine Disrupters, Copenhagen, Denmark, May 2009
Modulation of adrenocortical hormone production by UV filters in the H295R cell line [Oral]

Teaching & Supervision Experience

Instructor – The Hong Kong Polytechnic University

1. Environmental Engineering (CSE29964)
2. Environmental Impact Assessment – Theory and Practice (CSE40462)
3. Environmental Impact Assessment (CSE508)
4. Risk Assessment and Management (CSE532)
5. Environmental Management Systems (CSE539)

Supervision – The Hong Kong Polytechnic University

6 Postdoctoral Fellows, 11 PhD students, 11 MSc dissertations, 20 undergraduate final year projects, 2 Undergraduate Research and Innovation Scheme projects, 10 undergraduate and MSc part-time student assistants, and 9 summer interns

Journal Review (10)

Global Change Biology, National Science Review, Environmental Science and Technology, Environmental Science and Technology Letters, Environment International, ACS Environmental Au, Journal of Hazardous Materials, Environmental Pollution, ACS Omega, Science of the Total Environment, Chemosphere, RSC Advances, Royal Society Open Science, Environmental Toxicology and Chemistry, Journal of Environmental Sciences, Aerosol and Air Quality Research, Regional Studies in Marine Science

Grant Review (1)

Czech Science Foundation, 2015

Professional Affiliation

Member, American Chemical Society (ACS)

Member, International Society of Microbial Ecology (ISME)

Member, Society of Environmental Toxicology and Chemistry (SETAC)

Member, State Key Laboratory of Marine Pollution, City University of Hong Kong

Member, Hong Kong Branch of Southern Laboratory of Ocean Science and Engineering
Guangdong Laboratory (Guangzhou), The Hong Kong University of Science and Technology