

Jing Li

Associate Project Scientist

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EDUCATION

Ph. D. in Environmental Science, **Peking University**, Beijing, China 2013.09-2018.07

Advisor: Maosheng Yao

Thesis title: *Microbial Contents and Toxicity of Airborne Particulate Matter on a Global Scale*

B.S. in Environmental Engineering, **University of Science & Technology, Beijing**, Beijing, China 2009.09-2013.06

EMPLOYMENT

Associate Project Scientist, Department of Environmental Health Sciences, **UCLA**, US 2023.09-

Postdoc, Department of Environmental Health Sciences, **UCLA**, US 2022.09-2023.09

Postdoc, Department of Environmental Science and Engineering, **Caltech**, US 2018.09-2022.09

RESEARCH INTERESTS

Ambient air pollution; Indoor air pollution; Climate change-related air pollution; Wildfire PM_{2.5}; VOC emissions from residential gas appliances; Bioaerosols; Public health; Environmental Justice; Innovative methods for microbial analysis.

AWARDS AND HONORS

Sheldon K. Friedlander Award, American Association for Aerosol Research (2019)

CEMI Training and Travel Grants, California Institute of Technology (2019)

Exceptional Award for Academic Innovation, Peking University (2016)

Gao Tingyao Scholarship for National Outstanding PhD student Award, Tongji University (2016)

Presidential Scholarship, Peking University (2016)

Special Scholarship for PhD Students, Peking University (2015, 2014)

Outstanding Student Award, Peking University (2015, 2014)

Tang Xiaoyan Environmental Science and Innovation Scholarships, Peking University (2015)

National Scholarship for PhD Students, the Chinese Ministries of Education and Finance (2014)

Beijing Outstanding Graduates, Beijing Municipal Commission of Education (2013)

National Scholarship for Undergraduates, the Chinese Ministries of Education and Finance (2012)

GRANTS

Active

1. California Air Resources Board (CARB), #24RD005 (Role: **PI**, 2025.05-2028.04, \$900,000):
“Residential Appliances in Diverse California Communities: Emission, Exposure, and Health Impacts of Toxic Air Contaminants (RESPECT)”
2. National Institute of Environmental Health Sciences (NIEHS), #1R21ES038381-01 (Role: **Co-I**, 2025.11-2027.10, \$354,375)

“Indoor and Outdoor Exposure to LA Urban Wildfire Smoke – A Nature Experiment between the Palisades and Eaton Fires”

Completed

1. California Air Resources Board (CARB), #22RD026 (Role: **Key Personnel**, 2023.06-2026.05, \$500,000): “Indoor Air Quality in California: New Evidence and Environmental Justice”
2. Bill & Melinda Gates Foundation, #INV-030223 (Role: **Postdoc Researcher**, 2021.04-2021.09, \$599,983): “COVID-19: mgLAMP for SARS-CoV-2 Phase 2 - Transition and Field-Testing”
3. Bill & Melinda Gates Foundation, #INV-018569 (Role: **Postdoc Researcher**, 2020.06-2020.10, \$388,502): “To develop an assay that could be used to enable rapid quantification of SARS-CoV-2 pathogens in wastewater”
4. Bill & Melinda Gates Foundation, # OPP1192379 (Role: **Postdoc Researcher**, 2018.08-2020.06, \$1,000,000): “Field-scale Evaluation of Portable Microbial Pathogen Detection Systems in Low-Resource Settings”

PUBLICATIONS

Under review, submitted, revise and resubmit

Jing Li, Qiyue Nie, Yuan Yao, Haoxuan Chen, Priscilla Boo, Qiao Yu, Muchuan Niu, Yifang Zhu^{*}. Metal Concentrations in Surface Dust Following the 2025 Los Angeles Fires. (*In revision*)

Yuan Yao, Qiyue Nie, **Jing Li**, Muchuan Niu, Yihan Fan, Qiao Yu, Diane Garcia-Gonzales, Haoxuan Chen, Feng Gao, Michael Jerrett, Yifang Zhu^{*}. Toxic metals enriched in fine particulate matter during the 2025 Los Angeles wildfires. (*In revision*)

Clair Barnes^{*}, Theo Keeping, Gavin Madakumbura, John Abatzoglou, Park Williams, Amir AghaKhouchak, Izidine Pinto, Vikki Thompson, Robert Vautard, Seppe Lampe, Wim Thiery, Rosa Pietroiusti, Friederike Otto, Maja Vahlberg, Roop Singh, Nicole Lambrou, Edward Blakely, Yifang Zhu, **Jing Li**, Tarik Benmarhnia, Travis Longcore, Miriam Marlier, Emmanuel Raju, Nick Baumgart, Julie Arrighi, Friederike Otto. Climate change increased the likelihood of wildfire disaster in highly exposed Los Angeles area. (*Submitted*) [[Preprint](#)]

Peer Reviewed

Total citation = 2031, h-index = 20 (as of August 31st, 2026, on [Google Scholar](#))

denotes equal contribution, * denotes corresponding author.

First/Corresponding author

29. **Jing Li**, Xinlei Liu, Qiao Yu, Yifang Zhu^{*} (2026). From Outdoor to Indoor: Amplified Inequities in Wildfire PM_{2.5} Exposure Across the Contiguous United States. *Environmental Science & Technology*, 60 (26): 18733–18744. [[Link](#)]
28. **Jing Li**, Merel Bot, Xinlei Liu, Yuan Yao, Roel A. Ophoff, Yifang Zhu^{*} (2026). Detection of SARS-CoV-2 RNA on Air Purifier Filters in University Spaces Without Symptomatic or Confirmed Cases. *Aerosol Science and Technology*, 60 (5): 440-449. [[Link](#)]
27. **Jing Li**, Yifang Zhu^{*} (2025). The cost of clean air: Global disparities in reducing indoor wildfire-related PM_{2.5} exposure, *Science Advances*, 11: eady0890. [[Link](#)]
26. Yanzhe Zhu, Xunyi Wu, Alan Gu, Leopold Dobelle, Clément A. Cid, **Jing Li**^{*}, Michael R. Hoffmann^{*} (2022). Membrane-based in-gel loop-mediated isothermal amplification (mgLAMP) system for SARS-CoV-2 quantification in environmental waters, *Environmental Science & Technology*, 56 (2): 862–873. (*Selected as the Non-PCR winner in Rapid Wastewater SARS-CoV-2 Testing Challenge held by Water Environmental Foundation*) [[Link](#)]
25. **Jing Li**, Yanzhe Zhu, Xunyi Wu, Michael R Hoffmann^{*} (2020). Rapid detection methods for bacterial

- pathogens in ambient waters at the point of sample collection: A brief review, *Clinical Infectious Diseases*, 71 (Supplement_2): S84-S90. [[Link](#)]
24. **Jing Li**, Haoxuan Chen, Xinyue Li, Minfei Wang, Xiangyu Zhang, Junji Cao*, Fangxia Shen, Yan Wu, Siyu Xu, Hanqing Fan, Guillaume Da, Rujin Huang, Jing Wang, Chak K. Chan, Alma Lorelei de Jesus, Lidia Morawska, Maosheng Yao* (2019). Differing toxicity of ambient particulate matter (PM) in global cities, *Atmospheric Environment*, 212: 305-315. [[Link](#)]
 23. **Jing Li**, Junji Cao, Yongguan Zhu, Qinglin Chen, Fangxia Shen, Yan Wu, Siyu Xu, Hanqing Fan, Guillaume Da, Rujin Huang, Jing Wang, Alma Lorelei de Jesus, Lidia Morawska, Chak K. Chan, Jordan Peccia, Maosheng Yao* (2018). Global survey of antibiotic resistance genes in air, *Environmental Science & Technology*, 52 (19): 10975-10984. (*Selected as the ES&T Cover, ES&T's Best Papers of 2018 and ACS Editors' Choice, Recommended in Faculty Opinions, Featured by ACS as an "Embargoed Press Release", AAAS EurekAlert!, China Daily, Yahoo! News, etc.*) [[Link](#)]
 22. **Jing Li**, Liantong Zhou, Xiangyu Zhang, Caijia Xu, Liming Dong*, Maosheng Yao* (2016). Bioaerosol emissions and detection of airborne antibiotic resistance genes from a wastewater treatment plant, *Atmospheric Environment*, 124: 404-412. [[Link](#)]
 21. Kai Wei[#], Yunhao Zheng[#], **Jing Li**[#], Fangxia Shen, Zhuanglei Zou, Hanqing Fan, Xinyue Li, Chang-yu Wu, Maosheng Yao* (2015). Microbial aerosol characteristics in highly polluted and near pristine environments featuring different climatic conditions, *Science Bulletin*, 60 (16):1439-1447. [[Link](#)]
 20. **Jing Li**, Qi Chen, Xinyue Li, Maosheng Yao* (2014). Rapid point-of-use water purification using nanoscale zero valent iron (nZVI) particles, *Chinese Science Bulletin*, 59 (29/30): 3926-3934. [[Link](#)]
 19. **Jing Li**[#], Mingzhen Li[#], Fangxia Shen, Zhuanglei Zou, Maosheng Yao*, Chang-Yu Wu (2013). Characterization of biological aerosol exposure risks from automobile air conditioning system, *Environmental Science & Technology*, 47 (18): 10660-10666. [[Link](#)]
 18. Qi Chen[#], **Jing Li**[#], Yan Wu, Fangxia Shen, Maosheng Yao* (2013). Biological responses of Gram-positive and Gram-negative bacteria to nZVI (Fe⁰), Fe²⁺ and Fe³⁺, *RSC Advances*, 3: 13835-13842. [[Link](#)]

Co-author

17. Haoxuan Chen, Qiyue Nie, Qiao Yu, **Jing Li**, Muchuan Niu, Yuan Yao, Priscilla Boo, Albert Kyi, Chun-Ying Chao, Evelyn Deveraux, Daniel Sung, Chou-Hsien Lin, Anna Neville, Vine Blankenship, Haroula Baliaka, Richard Flagan, Nga Ng, Roya Bahreini, Ann Dillner, Armistead Russell, Pawel Misztal, Lea Hildebrandt Ruiz, Yifang Zhu* (2026). Characterizing Post-Fire Fine and Ultrafine Particles in the 2025 Eaton Fire Burn Zone and Nearby Areas. *Environmental Science & Technology Letters*, 13 (5): 728–736. [[Link](#)]
16. Natalie Ho, Shashwat Dhayade, Yue Zhang, Yidan Zhang, **Jing Li**, Yunyao Li, Yike Shen, Yifang Zhu, Feng Gao* (2026). Beyond spatiotemporal modeling: a review of applications of machine learning for traffic-related air pollution toward non-exhaust emissions. *npj Clean Air*, 2 (1): 33. [[Link](#)]
15. Yuan Yao, Diane Garcia-Gonzales, **Jing Li**, Muchuan Niu, Qiyue Nie, Michael Jerrett, Yifang Zhu* (2026). Indoor and Outdoor Volatile Organic Compound Levels during and after the 2025 Los Angeles Wildfires. *Environmental Science & Technology Letters*, 13 (1): 70-75. [[Link](#)]
14. Minghao Qiu*, Deyang Chen, Makoto Kelp, **Jing Li**, Guanyu Huang, and Mahdieh Danesh Yazdi (2025). The rising threats of wildland-urban interface fires in the era of climate change: The Los Angeles 2025 fires. *The Innovation*, 6 (5): 100835. [[Link](#)]
13. Fangxia Shen*, Mutong Niu, Haoxuan Chen, Ting Zhang, **Jing Li**, Haijie Tong, Yan Wu (2024). Nonlinear proinflammatory effect of short-term PM_{2.5} exposure: A potential role of lipopolysaccharide, *Journal of Environmental Sciences*, 136: 292-300. [[Link](#)]
12. Tiancong Ma, Haoxuan Chen, Yu-Pei Liao, Jiulong Li, Xiang Wang, Liqiao Li, **Jing Li**, Yifang Zhu*, Tian Xia* (2023). Differential toxicity of electronic cigarette aerosols generated from different generations of devices in vitro and in vivo, *Environment & Health*, 1 (5): 315-323. [[Link](#)]
11. Alan Y. Gu, Yanzhe Zhu, **Jing Li**, Michael R. Hoffmann* (2021). Speech-generated aerosol settling times and viral viability can improve COVID-19 transmission prediction, *Environmental Science: Atmospheres*, 2:

34-45. [\[Link\]](#)

10. Haijie Tong*, Fobang Liu, Alexander Filippi, Jake Wilson, Andrea M Arangio, Yun Zhang, Siyao Yue, Steven Lelieveld, Fangxia Shen, Helmi-Marja K Keskinen, **Jing Li**, Haoxuan Chen, Ting Zhang, Thorsten Hoffmann, Pingqing Fu, William H Brune, Tuukka Petäjä, Markku Kulmala, Maosheng Yao, Thomas Berkemeier, Manabu Shiraiwa, Ulrich Pöschl (2021). Aqueous-phase reactive species formed by fine particulate matter from remote forests and polluted urban air, *Atmospheric Chemistry and Physics*, 21: 10439–10455. [\[Link\]](#)
9. Yanzhe Zhu, **Jing Li**, Xingyu Lin, Xiao Huang, Michael R. Hoffmann* (2021). A hydrogel beads based platform for single-cell phenotypic analysis and digital molecular detection, *ACS Applied Bio Materials*, 4 (3): 2664-2674. [\[Link\]](#)
8. Siwen Wang, Yanzhe Zhu, Yang Yang, **Jing Li**, Michael R. Hoffmann* (2020). Electrochemical cell lysis of gram-positive and gram-negative bacteria: DNA extraction from environmental water samples, *Electrochimica Acta*, 338: 135864. [\[Link\]](#)
7. Xunyi Wu, Xiao Huang, Yanzhe Zhu, **Jing Li**, Michael R. Hoffmann* (2020). Synthesis and Application of Superabsorbent Polymer Microspheres for Rapid Concentration and Quantification of Microbial Pathogens in Ambient Water, *Separation and Purification Technology*, 239: 116540. [\[Link\]](#)
6. Haoxuan Chen, Xiangyu Zhang, Ting Zhang, Xinyue Li, **Jing Li**, Yang Yue, Minfei Wang, Yunhao Zheng, Hanqing Fan, Jing Wang, and Maosheng Yao* (2020). Ambient PM Toxicity Is Correlated with Expression Levels of Specific MicroRNAs, *Environmental Science & Technology*, 54 (16): 10227-10236. [\[Link\]](#)
5. Haoxuan Chen, **Jing Li**, Xiangyu Zhang, Xinyue Li, Maosheng Yao*, Gengfeng Zheng* (2018). Automated *in vivo* nano-sensing of breath-borne protein biomarkers, *Nano Letters*, 18: 4716-4726. [\[Link\]](#)
4. Yang Yue, Haoxuan Chen, Ari Setyan, Miriam Elser, Maria Dietrich, **Jing Li**, Ting Zhang, Xiangyu Zhang, Yunhao Zheng, Jing Wang*, Maosheng Yao* (2018). Size-resolved endotoxin and oxidizing potential of ambient particles in Beijing and Switzerland, *Environmental Science & Technology*, 52 (12): 6816-6824. [\[Link\]](#)
3. Kai Wei, Zhuanglei Zou, Yunhao Zheng, **Jing Li**, Fangxia Shen, Changyu Wu, Yan Wu, Min Hu, Maosheng Yao* (2016). Ambient bioaerosol particle dynamics observed during haze and sunny days in Beijing, *Science of the Total Environment*, 15 (550): 751-759. [\[Link\]](#)
2. Pengpeng Huang, Zhengfang Ye, Wuming Xie, Qi Chen, **Jing Li**, Zhencheng Xu, Maosheng Yao* (2013). Rapid magnetic removal of aqueous heavy metals and their relevant mechanisms using nanoscale zero valent iron (nZVI) particles, *Water Research*, 47 (12): 4050-4058. [\[Link\]](#)
1. Qi Chen, Min Gao, **Jing Li**, Fangxia Shen, Yan Wu, Zhenqiang Xu, Maosheng Yao* (2012). Inactivation and magnetic separation of bacteria from liquid suspensions using electrosprayed and nonelectrosprayed nZVI particles: Observations and mechanisms, *Environmental Science & Technology*, 46 (4): 2360-2367. [\[Link\]](#)

PATENTS

1. Membrane-Based in-Gel Loop-Mediated Isothermal Amplification (mgLAMP) System Enables Rapid Quantification of SARS-CoV-2 in Large-Volume Environmental Waters (2021). Michael R. Hoffmann, **Jing Li**, Yanzhe Zhu, Xunyi Wu, Alan Gu, Léopold Dobelle, Clément A. Cid. *US Patent Number US20220162686A1*. *International Patent Number WO2022115187A1*. [\[Link\]](#)

INVITED TALKS

1. Climate Change, Air Quality, and Human Health: Exposure of Air Pollution in A Changing Climate, *Hong Kong University of Science and Technology (Guangzhou) Thrust of Sustainable Energy and Environment*, Host: Prof. Huihe Qiu, November 2024
2. Risk Assessment and Monitoring of Environmental Microbes: from multi-country study to digital detection tools, *Caltech Division of Geological and Planetary Sciences*, Yuk Lunch Seminar, Host: Prof. Yuk L. Yung, January 2023.

3. Risk Assessment and Monitoring of Environmental Microbes: from Rapid Detection Method to Multi-Country Study, *Rutgers University School of Environmental and Biological Sciences*, Host: Prof. Benjamin Lintner, April 2022
4. Development of Portable Bacterial and Viral Pathogen Detection Systems for Low-Resource Settings, *Georgia Institute of Technology School of Civil and Environmental Engineering*, Host: Prof. Xing Xie, August 2021

CONFERENCE TALKS

1. Metals in Wind-Dispersible Dust and Ashes During and After the 2025 Los Angeles Fires, #8.BQ.4, *AAAR 43rd Annual Conference*, October 2025, Buffalo, US
2. Inequity of Exposure to Wildfire Smoke PM_{2.5} in the United States, #11.AE.1, *AAAR 42nd Annual Conference*, October 2024, Albuquerque, US
3. Inequity of Exposure to Wildfire Smoke PM_{2.5} in the United States, #PROKYAW6D8V, *Indoor Air 2024*, July 2024, Honolulu, US
4. SARS-CoV-2 on Portable Air Purifier Filters in Public Spaces without Confirmed Positive Occupants, #PROPVK0UY68, *Indoor Air 2024*, July 2024, Honolulu, US
5. SARS-CoV-2 on Portable Air Purifier Filters in Public Spaces without Confirmed Positive Occupants, #8.ID.5, *AAAR 41st Annual Conference*, October 2023, Portland, US
6. Membrane-Based In-Gel Loop-Mediated Isothermal Amplification (mgLAMP) System for SARS-CoV-2 Quantification in Environmental Waters, *NSF Research Coordination Network Workshop: Wastewater surveillance methods for new and emerging pathogens*, December 2022, Virtual
7. Development of Portable Bacterial and Viral Pathogen Detection Systems for Low-Resource Settings, *Global Summit on European Healthcare & Hospital Management*, May 2022, Virtual (*Keynote presentation*)
8. Rapid and Inexpensive Point-of-Use (POU) Testing for SARS-CoV-2 Quantification with Membrane-Based in-Gel Loop-Mediated Isothermal Amplification (mgLAMP) System, #M4.328, *TechConnect World Innovation Conference and Expo*, October 2021, Washington DC, US
9. Rapid and Inexpensive Point-of-Use (POU) Testing for SARS-CoV-2 Quantification with Membrane-Based in-Gel Loop-Mediated Isothermal Amplification (mgLAMP) System, #3596806, *ACS Fall 2021*, August 2021, Atlanta, US
10. Rapid and Inexpensive Point-of-Use (POU) Testing for Bacterial and Viral Quantification with Membrane-Based in-Gel Loop-Mediated Isothermal Amplification (mgLAMP) System, *DEVCOM Soldier Center Water Sensor Symposium*, March 2021, Virtual
11. Differing toxicity of ambient particulate matter (PM) in global cities, #21-O20, *10th National Conference on Environmental Chemistry*, August 2019, Tianjin, China
12. Digital Detection of *Salmonella typhi* in large-volume environmental water samples using an asymmetric membrane, #596, *TechConnect World Innovation Conference and Expo*, June 2019, Boston, US
13. Digital Detection of *Salmonella typhi* in large-volume environmental water samples using an asymmetric membrane, *Chinese Environmental Scholars Forum 2019*, June 2019, Houston, US
14. Antibiotic-resistant bacteria (ARB) and antibiotic resistance genes (ARGs) in air media, #14.BA.3, *International Aerosol Conference*, September 2018, St. Louis, US
15. Investigation of bioaerosol characterization in world cities using automobile air conditioning filter, #Ps0189, *Asian Aerosol Conference*, July 2017, Jeju, Korea
16. Investigation of bioaerosol characterization in world cities using automobile air conditioning filter, *Chinese Society of Particuology 9th Annual Conference*, August 2016, Chengdu, China

TEACHING EXPERIENCE

- April 2026 Guest Lecturer
 Bioaerosols and the Airborne Transmission of COVID-19, *UCLA Fielding School of Public Health*, EHS C152D/C252D: Properties and Measurement of Airborne Particles
- October 2022 Guest Lecturer
 Risk Assessment and Monitoring of Environmental Microbes: from multi-country study to digital detection tools, *UCLA Fielding School of Public Health*, EHS 411: Environmental Health Sciences Seminar Series
- March 2019 Guest Lecturer
 Development of Portable Microbial Pathogen Detection Systems for Low-Resource Settings, *Loyola Marymount University Seaver College of Science and Engineering*
- Spring 2014 Teaching assistant
 Bioaerosol 12710921, *Peking University College of Environmental Sciences and Engineering*
- Spring 2014 Teaching assistant
 Principles and applications of instrumental analysis in environmental and health 12700895, *Peking University College of Environmental Sciences and Engineering*

ACADEMIC SERVICES

Memberships: American Association for Aerosol Research (AAAR)

Journal Reviewer: *Nature Communications, Environmental Science & Technology, Environmental Science & Technology Letters, ACS ES&T Air, Environmental International, Journal of Aerosol Science, Annals of Work Exposures and Health, Frontiers of Environmental Science & Engineering, Environmental Justice, Communications Earth & Environment*

SELECTED OUTREACH AND MEDIA

- July 2026 Public Research Seminar at California Air Resources Board (CARB)
[*Indoor Air Quality in California: New Evidence & Environmental Justice Implications*](#)
- June 2026 Media Coverage at ABC7
[*UCLA researchers race to uncover environmental impact of Boyle Heights warehouse fire*](#)
- May 2025 Media Coverage at The Guardian
[*Toxic wildfire pollution infiltrates homes of 1bn people a year, study finds*](#)