

## Peihua Wang

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### CONTACT & PROFILES

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### RESEARCH INTERESTS

Modeling infectious disease and microbial transmission across populations, built environments, and microbial communities

### PROFESSIONAL EXPERIENCE

Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, USA

Postdoctoral Research Scientist Nov 2022–Jun 2025

Department of Mechanical Engineering, The University of Hong Kong, HKSAR

Postdoctoral Fellow Sept 2021–Nov 2022

### EDUCATION

The University of Hong Kong, HKSAR

Ph.D. Mechanical Engineering Sept 2016–Aug 2021

Thesis: Hitchhiking of microbes and their friendships

Zhejiang University, Hangzhou, China

B.S. Environmental Engineering Sept 2012–June 2016

### HONORS & AWARDS

HK Chief Executive's Commendation for Community Service for outstanding contribution to the fight against COVID-19 2021

HKU-Stanford MedTech Hackathon, 2<sup>nd</sup> runner up 2019

Goldman Sachs Coding Challenge Award 2019

HKU Philip K H Wong Foundation Postgraduate Fellowship 2016

HKU Y S and Christabel Lung Postgraduate Scholarship 2016

HKU Postgraduate Scholarship 2016

### GRANTS

*Simulation of microbial transmission cycle in built environment*, Procter & Gamble hygiene innovation fund US\$ 419 890, 2021

Role: equivalent to PI (but not eligible in 2021), wrote proposal and ethical approval

### MANUSCRIPTS UNDER REVIEW (\* indicates corresponding author)

1. **Wang P\***, Wang X, Pei S, Xu X, Zhang W, Wang Y, Yang W. *Rural-to-urban migrant worker mobility shaped measles epidemics in China*. Under review. [\[link\]](#)

2. **Wang P\***, Chen J, Zhang W, Wang Y, Yang W. *Modeling the influences of climate conditions on measles transmission in China*. Under review.
3. **Wang P**, Zhao P, Lim C, Wang H, Lam Z, Liu J, Lee PKH, Li Y. *Using Lactobacillus strains to simulate multi-pathway fomite-mediated bacterial transfer in households*. Under review.
4. Zhao P, **Wang P\***, Zhang N, Lam T, Wang H, Liu J, Li Y. *Tracking the indoor spread of invading microbes and mitigation strategies*. Under review.

## PUBLICATIONS

1. **Wang P**, Tong X, Zhang N, Miao T, Chan Jack PT, Huang H, Lee Patrick KH, Li Y. *Fomite transmission follows invasion ecology principles*. *mSystems*. 2022;7(3):e00211–22.
2. **Wang P**, Zhang N, Miao T, Chan JPT, Huang H, Lee PKH, Li Y. *Surface touch network structure determines bacterial contamination spread on surfaces and occupant exposure*. *Journal of Hazardous Materials*. 2021;416:126137.
3. **Wang P**, Zhang N, Lee PKH, Li Y. *Quantification of Lactobacillus delbrueckii subsp. bulgaricus and its applicability as a tracer for studying contamination spread on environmental surfaces*. *Building and Environment*. 2021;197:107869.
4. Zhao P, **Wang P**, Lam T, Zhang N, Wang H, Zhang H, Liu J, Li Y. *High-touch surfaces with moderate contamination levels as key nodes in microbial dissemination*. *Journal of Hazardous Materials*. 2025:138834.
5. Jia W, Wang Q, Lung DC, Chan P-T, **Wang P**, Dung EC-H, Didik T, Choi GK-Y, Tse H, Wu Y, et al. *Co-existence of airborne SARS-CoV-2 infection and non-infection in three connected zones of a restaurant*. *Journal of Hazardous Materials*. 2024;480:136388.
6. Zhao P, Wang Q, **Wang P**, Xiao S, Li Y. *Influence of network structure on contaminant spreading efficiency*. *Journal of Hazardous Materials*. 2022;424:127511.
7. Miao T, **Wang P**, Zhang N, Li Y. *Footwear microclimate and its effects on the microbial community of the plantar skin*. *Scientific Reports*. 2021;11(1):20356.
8. Zhang N, Jia W, **Wang P**, Dung C-H, Zhao P, Leung K, Su B, Cheng R, Li Y. *Changes in local travel behaviour before and during the COVID-19 pandemic in Hong Kong*. *Cities*. 2021;112:103139.
9. Zhang N, **Wang P**, Miao T, Chan P-T, Jia W, Zhao P, Su B, Chen X, Li Y. *Real human surface touch behavior based quantitative analysis on infection spread via fomite route in an office*. *Building and Environment*. 2021;191:107578.
10. Zhang N, Jia W, Lei H, **Wang P**, Zhao P, Guo Y, Dung C-H, Bu Z, Xue P, Xie J, et al. *Effects of human behavior changes during the coronavirus disease 2019 (COVID-19) pandemic on influenza spread in Hong Kong*. *Clinical Infectious Diseases*. 2021;73(5):e1142–e50.
11. Zhang N, Jia W, **Wang P**, King M-F, Chan P-T, Li Y. *Most self-touches are with the nondominant hand*. *Scientific Reports*. 2020;10(1):10457.
12. Zhang N, Su B, Chan P-T, Miao T, **Wang P**, Li Y. *Infection spread and high-resolution detection of close contact behaviors*. *International Journal of Environmental Research and Public Health*. 2020;17(4).

## SCIENTIFIC PRESENTATIONS

Models of Infectious Disease Agent Study (MIDAS) Annual Meeting, USA

Lightning talk, 2024

Indoor Air, the 18<sup>th</sup> Conference of the International Society of Indoor Air Quality &

Climate (ISIAQ), USA	Poster, 2024
MIDAS Annual Meeting, USA	Poster, 2023
College of Energy Engineering, Zhejiang University, China	Invited talk, 2023
School of Public Health, Zhejiang University, China	Invited talk, 2023
HKU-Procter & Gamble Workshop on Microbial Transmission in Building Environment, HKSAR	Moderator, invited talk, 2023
School of Public Health, Sun Yat-sen University, China	Invited talk, 2022
Indoor Air, the 17 <sup>th</sup> Conference of the ISIAQ, Finland	Virtual poster, 2022
ISIAQ Healthy Buildings America, USA	Virtual oral, 2021
Indoor Air, the 16 <sup>th</sup> Conference of the ISIAQ, Korea	Virtual oral, 2020
ISIAQ Healthy Buildings Asia, China	Oral, 2019
17 <sup>th</sup> International Symposium on Microbial Ecology, Germany	Poster, 2018
Indoor Air, the 15 <sup>th</sup> Conference of the ISIAQ, USA	Oral, 2018

### PROFESSIONAL SERVICE

Member, Models of Infectious Disease Agent Study (MIDAS)	2022–present
Member, International Society of Indoor Air Quality & Climate (ISIAQ)	2018–present
Scientific and Technical Committee member, ISIAQ	
STC13–Microbes in indoor environments	2023–2024
STC31–Health effects and epidemiology	2023–2024
Journal reviewer: Building and Environment, Cities, Environment International, Indoor Environments, Journal of Building Engineering, Progress in Biophysics and Molecular Biology, Travel Medicine and Infectious Disease	

### TEACHING EXPRIENCE

Teaching assistant, HKU Mechanical Engineering	
Air Conditioning and Refrigeration (MECH3429)	2017–2020
Teaching laboratory demonstrator, HKU Mechanical Engineering	
Fundamental of Electrical Engineering (MECH2406)	2016–2017

### REFERENCES

Yuguo Li, Chair Professor of Building Environment, Department of Mechanical Engineering, The University of Hong Kong, HKSAR; email: [liyig@hku.hk](mailto:liyig@hku.hk)

Wan Yang, Assistant Professor, Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, USA; email: [wy2202@columbia.edu](mailto:wy2202@columbia.edu)

Patrick K. H. Lee, Professor, School of Energy and Environment, City University of Hong Kong, HKSAR; email: [patrick.kh.lee@cityu.edu.hk](mailto:patrick.kh.lee@cityu.edu.hk)

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