

Jingqiu Liao

jl3374@cornell.edu
jingqiuliao.com

Education

- Ph.D. candidate, Microbiology;** Cornell University [CU] 2015-Current
Major advisor: Martin Wiedmann, Food Safety Lab
Minor advisors: Michael Stanhope, Genomics; Daniel Buckley, Soil Science
- M.S., Environmental Sciences;** Peking University [PKU] 2011-2014
Advisor: Yi Huang, Environmental Sciences & Engineering
- B.S., Ecology;** University of Science & Technology Beijing [USTB] 2007-2011

Research Interests

Microbial evolution and ecology / Microbial biogeography / Environmental microbiology /
Evolutionary and ecological genomics / Population genetics / Microbial genomics / Foodborne pathogens

Research Experience

- Graduate Research Fellow;** Department of Food Science, CU 2016-Current
Research area: Ecology and evolution of foodborne pathogens
Key projects: *Biogeography and microevolution of edaphic Listeria in natural environment across U.S.*
Micoevolutionary pattern of antimicrobial-resistant Salmonella enterica
Dispersal pattern of E. coli in riparian zone driven by wild animals
- Research Assistant;** Department of Environmental Sciences & Engineering, PKU 2014-2015
Research area: Biogeography and assembly mechanisms of aquatic bacterial communities
Key project: *Biogeography of bacterial communities in lakes on Yungui Plateau, China*
- Graduate Research Assistant;** Department of Environmental Sciences & Engineering, PKU 2011-2014
Research area: Ecology of microbial community in oil-contaminated soil;
Habitat security assessment and conservation of aquatic ecosystem
Key projects: *Toxicity and ecology of oil contaminated soil in main oil fields in China*
Global Environment Outlook 5
The strategy and challenge in conservation of Chinese ecosystems
Regionalization of Dianchi Basin based on ecological function

Publications

Books

Huang Y, Wang J, Chen H, **Liao J**, Huang M. Oil contamination and toxicity assessment of soil in main oil fields in China. Science Press, Beijing, China. June 2018 (in Chinese)

Papers in peer-refereed journals

- Liao J**, Orsi RH, Carroll LM, Kovac J, Ou H, Zhang H, Wiedmann M. 2018. Serotype-specific evolutionary patterns of antimicrobial-resistant *Salmonella enterica*. *BMC Evol Biol* (under review)
- Liao J**, Wiedmann M, Kovac J. 2017. Genetic stability and evolution of the *sigB* allele, used for *Listeria sensu stricto* subtyping and phylogenetic inference. *Appl Environ Microbiol* 83:e00306-17
- Liao J**, Cao X, Wang J, Zhao L, Sun J, Jiang D, Huang Y. 2017. Similar community assembly mechanisms underlie similar biogeography of rare and abundant bacteria in lakes on Yungui Plateau, China. *Limnol Oceanogr* 2:723-735
- Cao X, Wang J, **Liao J**, Gao Z, Jiang D, Sun J, Zhao L, Huang Y, Luan S. 2016. Bacterioplankton communities response to key environmental variables in plateau freshwater lake ecosystems: a structural equation modeling analysis. *Sci Total Environ* 580:457-467

- Liao J**, Zhao L, Cao X, Sun J, Gao Z, Wang J, Jiang D, Fan H, Huang Y. 2016. *Cyanobacteria* are assembled via niche process influenced by water physicochemical property, lake morphology and watershed land-use. *Sci Rep* 6: 36357
- Liao J**, Cao X, Zhao L, Wang J, Gao Z, Wang MC, Huang Y. 2016. The importance of neutral and niche processes for bacterial community assembly differs between habitat generalists and specialists. *FEMS Microbiol Ecol* 92: fiw174
- Wang J, Cao X, Chai L, **Liao J**, Huang Y, Tang X. 2016. Oxidative damage of naphthenic acids on the *Eisenia fetida* earthworm. *Environ Toxicol* 31:1337-1343
- Liao J**, Wang J, Jiang D, Wang M, Huang Y. 2015. Long-term oil contamination causes similar changes in microbial communities of two distinct soils. *Appl Microbiol Biotechnol* 99: 10299-10310
- Liao J**, Wang J, Huang Y. 2015. Bacterial community features are shaped by geographic location, physico-chemical properties and oil contamination of soil in main oil fields of China. *Microb Ecol* 70:380-389
- Cao X, Wang, J, **Liao J**, Huang Y, Sun J. 2015. The threshold responses of phytoplankton community to nutrient gradient in a shallow eutrophic lake. *Ecol Indic* 61:258-267
- Wang J, Cao X, Chai L, **Liao J**, Huang Y, Tang X. 2015. Quantification and characterization of naphthenic acids from soil of oil exploring areas in China by GC/MS. *Anal Methods* 7:2149-2154
- Wang J, Cao X, **Liao J**, Huang Y, Tang X. 2015. Carcinogenic potential of PAHs in oil-contaminated soils from the main oil fields across China. *Environ Sci Pollut R* 22:10902-10909
- Yang Y, Wang J, **Liao J**, Xie S, Huang Y. 2015. Abundance and diversity of soil petroleum hydrocarbon degrading microbial communities in oil exploring areas. *Appl Microbiol Biotechnol* 99:1935-1946;
- Yang Y, Wang J, **Liao J**, Xie S, Huang Y. 2014. Distribution of naphthalene dioxygenase genes in crude oil contaminated soils. *Microb Ecol* 68:785-793
- Liao J**, Cao X, Wang J, Huang Y. 2014. Basin-scale aquatic ecosystem health assessment with composite indices of chemistry and aquatic biota: A case study of Dianchi Lake. *Acta Sci Circumst* 34(7):1845-1852 (in Chinese)
- Liao J**, Huang Y. 2013. Global trend in aquatic ecosystem research from 1992 to 2011. *Scientometrics* 98:1203-1219
- Liao J**, Huang Y. 2013. Research progress on using index of biological integrity to assess aquatic ecosystem health. *Chin J Appl Ecol* 24(1):295-302 (in Chinese)
- Liao J**, Wen H, Su Y, Cao X, Huang Y. 2012. The assessment for habitat security of aquatic ecosystem-A case study on Taizi River sub-basin, Benxi River. *Ecol & Environ Sci* 21(7):1277-128 (in Chinese)

Papers in preparation

- Liao J**, Orsi RH, Carroll LM, Wiedmann M. Comparative genomics reveals different host-associated and geographic-associated genetic variations in antimicrobial-resistant *Salmonella enterica*
- Liao J**, Bergholz P, Wiedmann M. Ecological processes shaping the biogeography of *E. coli* in riparian buffer zones varies by landscape
- Liao J**, Huang M, Huang Y. Stochastic and deterministic processes in shaping the phylogeographic pattern of bacterial community in sediment of lakes on Yungui Plateau, China (in preparation)

Conference Abstracts

- Liao J**, Orsi R, Carroll L, Kovac J, Ou H, Zhang H, Wiedmann M. 5/2018. Serotype-specific evolutionary pattern of antimicrobial-resistant *Salmonella enterica*. The Biology of Genomes at Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA
- Liao J**, Wiedmann M, Kovac J. 7/2017. Genetic stability and evolution of the *sigB* allele used for *Listeria* subtyping and phylogenetic inference. Ecological & Evolutionary Genomics Gordon Research Conferences; University of New England, Biddeford, ME, USA

Presentations

Serotype-specific evolutionary pattern of antimicrobial-resistant <i>Salmonella enterica</i> . Microbiology Graduate Seminar; CU, USA	4/2018
Genetic stability and evolution of <i>sigB</i> allele of <i>Listeria sensu stricto</i> . Microbiology Graduate Seminar; CU, USA	3/2017
The physicochemical property and microbial structure of oil contaminated soils. M.S. Dissertation Seminar; PKU, China	6/2014
Conservation of Chinese ecosystems: strategy and challenge. The 6 th SNU-PKU-KU Environmental Workshop; Seoul National University, South Korea	7/2012
The influence of climate change on human ecology. The 6 th TU-USTB Joint Meeting on Sciences & Engineering Design; Tohoku University, Japan	7/2010

Reviewer Activities

Journals

Int Biodeterior Biodegradation; Scientometrics; Fund Appl Limnol; Ecotox Environ Safe

Skills

Microbial isolation and culture / Molecular biology (DNA) / Whole genome sequencing / Population genetics
Bioinformatics programming (Python) / Multivariate analyses of ecological data (Canoco, SPSS, R)

Teaching Experience

Teaching assistant; Course: General Microbiology; CU	2-5/2018
Teaching assistant; Course: Environmental ecology; PKU	2011-2012

Leadership & Outreach

Public relations of Field of Microbiology Students (FoMS); CU	2017-2018
The 13 th Annual Retreat of the Center for Infection and Pathobiology development; CU	4/2017
Vice-captain of PKUI Team; Solar Decathlon China	2012-2013
Vice-president of College Student Union; PKU	2012-2013
Vice-president of College Student Union; USTB	2009-2010
Volunteer of Beijing Olympic Games; Beijing, China	7-8/2008

Scholarships, Fellowships & Awards

Graduate Research Assistantship; Department of Food Science; CU	2016-Current
Conference and Research Travel Grants; CU	2017, 2018
Cornell Graduate Fellowship; CU	2015-2016
Graduate Research Assistantship; College of Environmental Sciences & Engineering; PKU	2011-2014
Sander Scholarship; PKU	2013
Academic Innovation Award; PKU	2013
Honor Student for Excellent Academic Records; PKU	2012
The 2 nd Prize of Academic Innovation Contest; PKU	2012
National Scholarship; China	2010
National Inspirational Scholarship; China	2009
Freshmen Scholarship; USTB	2008
Student Innovation Program Scholarship; USTB	2008