

Jingqiu Liao

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Education

Ph.D. Candidate, Microbiology

CORNELL UNIVERSITY

- Major advisor: Martin Wiedmann, Department of Food Science
- Minor advisors: Michael Stanhope (Genomics); Daniel Buckley (Soil Science)

2015-Current

Ithaca, NY, US

Exchange Ph.D. student

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

- Advisor: Otto Cordero, Department of Civil and Environmental Engineering

2019-Current

Cambridge, MA, US

M.S., Environmental Sciences

PEKING UNIVERSITY

- Advisor: Yi Huang, Department of Environmental Sciences

2011-2014

Beijing, China

B.S., Ecology

UNIVERSITY OF SCIENCE & TECHNOLOGY BEIJING

2007-2011

Beijing, China

Research Interests

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

Research Experience

Graduate Research Associate

FIELD OF MICROBIOLOGY, CORNELL UNIVERSITY

- Lead projects (i) *Biogeography and microevolution of edaphic Listeria in natural environment across US*, (ii) *Micoevolutionary pattern of antimicrobial-resistant Salmonella enterica*, and (iii) *Influence of landscape on biogeography of E. coli in watershed*.

2016-Current

Ithaca, NY, US

Research Associate

DEPARTMENT OF ENVIRONMENTAL SCIENCES, PEKING UNIVERSITY

- Led project *Biogeography and assembly of bacterial communities in lakes on Yungui Plateau, China*.

2014-2015

Beijing, China

Graduate Research Assistant

DEPARTMENT OF ENVIRONMENTAL SCIENCES, PEKING UNIVERSITY

- Involved in projects (i) *Toxicity and ecology of oil contaminated soil in oil fields of China*, (ii) *Global Environment Outlook 5*, and (iii) *Regionalization of Dianchi Basin, China*.

2011-2014

Beijing, China

Publications

- [1] 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 19:132
- [2] 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 (Book in Chinese)
- [3] 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
- [4] 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
- [5] 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

- [6] **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
- [7] **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
- [8] 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
- [9] **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
- [10] **Liao J**, Wang J, Huang Y. 2015. Bacterial community features are shaped by geographic location, physicochemical properties and oil contamination of soil in main oil fields of China. *Microb Ecol* 70:380-389
- [11] 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
- [12] 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
- [13] 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
- [14] 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
- [15] 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
- [16] **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)
- [17] **Liao J**, Huang Y. 2013. Global trend in aquatic ecosystem research from 1992 to 2011. *Scientometrics* 98:1203-1219
- [18] **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)
- [19] **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)

Presentations

Microbiome, Cold Spring Harbor Laboratory Meeting

Jul., 2019

POSTER PRESENTER

Cold Spring Harbor, NY, US

- Comparative genomics reveals different population structures associated with host and geographic origin in antimicrobial-resistant *Salmonella enterica*

Microbiology Graduate Seminar, Cornell University

Mar., 2019

ORAL PRESENTER

Ithaca, NY, US

- Nationwide distribution of *Listeria* in soil from natural environment

Biology of Genomes, Cold Spring Harbor Laboratory Meeting

May, 2018

POSTER PRESENTER

Cold Spring Harbor, NY, US

- Serotype-specific evolutionary pattern of antimicrobial-resistant *Salmonella enterica*.

Microbiology Graduate Seminar, Cornell University

Apr., 2018

ORAL PRESENTER

Ithaca, NY, US

- Serotype-specific evolutionary pattern of antimicrobial-resistant *Salmonella enterica*

Ecological & Evolutionary Genomics, Gordon Research Conference

Jul., 2017

POSTER PRESENTER

Biddeford, ME, US

- Genetic stability and evolution of the *sigB* allele used for *Listeria* subtyping and phylogenetic inference

Microbiology Graduate Seminar, Cornell University

Mar., 2017

ORAL PRESENTER

Ithaca, NY, US

- Genetic stability and evolution of *sigB* allele of *Listeria sensu stricto*

M.S. Dissertation Seminar; Peking University

ORAL PRESENTER

- The physicochemical property and microbial structure of oil contaminated soils

Jun., 2014

Beijing, China

The 6th SNU-PKU-KU Environmental Workshop; Seoul National University

ORAL PRESENTER

- Conservation of Chinese ecosystems: strategy and challenge

Jul., 2012

Seoul, South Korea

The 6th TU-USTB Joint Meeting on Sciences & Engineering Design; Tohoku University

ORAL PRESENTER

- The influence of climate change on human ecology

Jul., 2010

Sendai, Japan

Reviewer Activities

Journals Int Biodeterior Biodegradation / Scientometrics / Fund Appl Limnol / Ecotox Environ Safe

Skills

Biology Microbial isolation and culture / Molecular biology (DNA) / Whole genome sequencing / Comparative genomics
Bioinformatics Programming (Python) / Multivariate analysis (R)
Languages English, Chinese

Teaching Experience

Teaching assistant

BIOM2900 GENERAL MICROBIOLOGY, CORNELL UNIVERSITY

Feb.-May, 2018

Ithaca, NY, US

Teaching assistant

ENVIRONMENTAL ECOLOGY, PEKING UNIVERSITY

Sep. 2011-Jan. 2012

Beijing, China

Leadership & Outreach

Social chair, Field of Microbiology Students (FoMS), Cornell University

2017-2018

Student representative, The 13th Annual Retreat of the Center for Infection & Pathobiology, Cornell University

Apr. 2017

Vice-captain, PKUI Team, Solar Decathlon China

2012-2013

Vice-president, College Student Union, Peking University

2012-2013

Vice-president, College Student Union, University of Science & Technology Beijing

2009-2010

Volunteer, Beijing Olympic Games

Jul.-Aug./2008

Honors & Awards

Graduate Research Assistantship, Cornell University

2016-Current

Conference & Research Travel Grants, Cornell University

2017-2019

Cornell Graduate Fellowship, Cornell University

2015-2016

Graduate Research Assistantship, Peking University

2011-2014

Sander Scholarship, Peking University

2013

Academic Innovation Award, Peking University

2013

Honor Student for Excellent Academic Records, Peking University

2012

The 2nd Prize of Academic Innovation Contest, Peking University

2012

National Scholarship, China

2010

National Inspirational Scholarship, China

2009

Freshmen Scholarship, University of Science & Technology Beijing

2008

Student Innovation Program Scholarship, University of Science & Technology Beijing

2008