

Jingrang Lu, Biologist, in EPA's National Exposure Research Laboratory

Exposure Methods and Measurements Division

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Area of Expertise: Jingrang Lu's research has aimed at characterization of microbial community, and development of pathogenic bacterial detection methods and microbial source tracking methods in aquatic systems. More recently, he has focused on transcriptomic responses and profiles of microbial organisms, especially *Legionella*, toxic cyanobacteria and amoebae, on disinfectants, pipe materials and environmental factors in drinking water systems and source water. His research goal is to develop risk-based management decision-making tools in drinking water systems using transcriptomic analysis system of *Legionella*-amoebae for monitoring and risk assessment.

Select Publications:

- Lu, J., Struewing, I., Vereen, E., Kirby, A. E., Levy, K., Moe, C., & Ashbolt, N. (2016). Molecular Detection of *Legionella* spp. and their associations with *Mycobacterium* spp., *Pseudomonas aeruginosa* and amoeba hosts in a drinking water distribution system. *J. Appl. Microbiol.* 120(2), 509-521.
- Lu, J., Struewing, I., Yelton, S., & Ashbolt, N. (2015). Molecular Survey of Occurrence and Quantity of *Legionella* spp., *Mycobacterium* spp., *Pseudomonas aeruginosa* and Amoeba Hosts in Municipal Drinking Water Storage Tank Sediments. *J. Appl. Microbiol.* 119, 278--288.
- Lu, J., Helen Buse, Gomez-Alvarez, V., Struewing, I., Santo Domingo, J., and Ashbolt, N. J., 2014. Impact of drinking water conditions and copper materials on downstream biofilm microbial communities and *Legionella pneumophila* colonization. *J Appl Microbiol.* 2014 Jun 17. doi: 10.1111/jam.12578.
- Lu, J., H. Ryu, J. Vogel, J. Santo Domingo, and N. Ashbolt, 2013. Molecular Detection of *Campylobacter* and Fecal Indicators during the Northern Migration of Sandhill Cranes (*Grus canadensis*) at the Central Platte River. *Appl. Environ. Microbiol.* 79: doi 10.1016/j.ijheh.2013.04.005.
- Lu, J., I. Struewing, H. Y. Buse, J. Kou, H. A. Shuman, S. P. Faucher, and N. J. Ashbolt, 2013. *Legionella pneumophila* transcriptional response following exposure to CuO nanoparticles. *Appl. Environ. Microbiol.* 79(8): 2713-2720.
- Lu, J., H. Ryu, J. Santo Domingo, J. F. Griffith, and N. Ashbolt, 2011. Molecular detection of *Campylobacter* spp. in California Gull (*Larus californicus*) excreta. *Appl. Environ. Microbiol.* 77(14):5034-5039.

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Education:

- Ph.D. Microbial Ecology, Ocean University of China
- M.S. Statistics, University of Georgia
- M.S. Zoology, East China Normal University, China
- B.S. Biology, East China Normal University, Shanghai, China

Professional Experience:

- Biologist, USEPA, ORD, NERL-MCEARD, Cincinnati, OH, 2009-present
- Research Scientist, Premier Research Group, Chicago, IL, 2008-2009
- Senior Research Associate of NRC, USEPA, ORD, NRMRL, Cincinnati, OH, 2004-2008
- Research Scientist, Molecular Epidemiology Inc., Seattle, WA, 2004.
- Research Associate Scientist, University of Georgia, Athens, GA, 1998-2003

Honors and Awards:

- 2012-2013 U.S. Embassy Science Fellowship.
- 2011 ORD's First Pathfinder Innovation by US EPA, which initiated to assess health risks using transcriptomics.
- 2010 Level I Award at EPA Scientific and Technological Achievement Awards (STAA) Awarded as a co-author in AEM
- 2010 Level III EPA Scientific and Technological Achievement Awards (STAA) Awarded as a first author in AEM
- 2008 Level II Scientific and Technical Achievement Award. Scientific and Technical Achievement in the Field of Water Quality Monitoring and Indicators of Fecal Pollution.