

Hodon Ryu, Environmental Engineer/Microbiologist in EPA's National Risk Management Research Laboratory

Water Systems Division

[Mailing Address](#)

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Areas of Expertise:

- Water treatment processes for the removal of microbial contaminants.
- Pathogen detection and quantitative microbial risk assessment.
- Microbial community characterization and bioinformatics.
- Sustainable energy-saving wastewater treatment systems.
- Inactivation efficacy of waterborne pathogens and opportunistic premise plumbing pathogens including *Legionella pneumophila* using germicidal multiple-wavelength UV-LEDs.

Select Publications:

Tiwari, A., A. Hokajärvi, J. Santodomingo, A. Kauppinen, M. Elk, H. **Ryu**, J. Balamuralikrishna, and T. Pitkänen. 2018. [Categorical performance characteristics of method ISO 7899-2 and indicator value of intestinal enterococci for bathing water quality monitoring](#). Journal of Water and Health. 16(5):711-723.

Ryu, H., Brinkman, N., Schrantz, K., and Boczek, L. 2018. [Applicability of integrated cell culture reverse transcriptase quantitative PCR \(ICC-RTqPCR\) for the simultaneous detection of the four human enteric enterovirus species in disinfection studies](#). Journal of Virological Methods. 258:35-40.

Beck, S., **Ryu**, H., Boczek, L., Cashdollar, J., Jeanis, K., Rosenblum, J., Lawal, O., and Linden, K. 2017. [Evaluating UV-C LED disinfection performance and investigating potential dual-wavelength synergy](#). Water Research. 109:207-216.

Dhar, B., **Ryu**, H., Ren, H., Santodomingo, J., Chae, J., and Lee, H. 2016. [High Biofilm Conductivity Maintained Despite Anode Potential Changes in a Geobacter-Enriched Biofilm](#). ChemSusChem. 9:3485-3491.

Boczek, L., Rhodes, E., Cashdollar, J., **Ryu**, J., Popovici, J., Hoelle, J., Hayes, S., Rodgers, M., and Ryu, H. 2016. [Applicability of UV resistant Bacillus pumilus spore as a human adenovirus surrogate for evaluating the effectiveness of virus inactivation in low-pressure UV treatment systems](#). Journal of Microbiological Methods 122:43-49.

Wang, H., C. Proctor, M. Edwards, M. Pryor, J. Santodomingo, H. **Ryu**, A. Camper, A. Olson, and A. Pruden. 2014. [Microbial community response to chlorine conversion in a chloraminated drinking water distribution system](#). Environmental Science & Technology 48(18):10624-10633.

View more research publications by [Hodon Ryu](#).

Education:

- Ph.D., Arizona State University, Tempe AZ; Civil and Environmental and Sustainable Engineering, 2003
- M.S., Hanyang University, Seoul, Korea; Geoenvironmental System Engineering, 1998
- B.S., Hanyang University, Seoul, Korea; Geoenvironmental System Engineering, Natural Energy Resources/Petroleum Engineering, 1996

Professional Experience:Project and Workgroups

- US EPA's Pathogen Equivalency Committee (2016-present)
- Primary Analyst: US EPA, protozoan performance test program (2004 – 2008) and aerobic spore round robin test program (2007).

Memberships and Affiliations

- International Editorial Board: *Journal of Water and Health* (2011-present)
- Manuscript reviewer for 15 journals including: *Water Research*, *Environmental Science and Technology*, and *Applied Environmental Microbiology*
- Water Environment Federation (WEF): Disinfection & Public Health Committee (2016-present)
- American Water Works Association (AWWA): Joint Section Research Committee (2016-present)
- Guest Editor: Special issues of *Journal Water* entitled "Removal and Inactivation of Waterborne Pathogens during Water Treatment Processes" and "Advances in Water and Wastewater Monitoring and Treatment Technology"
- Graduate Faculty Membership (2016-present): University of Cincinnati, University of Toledo
- Member of International Water Association (IWA), AWWA, WEF, and International Ultraviolet Association (IUVA)

Awards and Honors

- Provisional U.S. Patent, Shower head with ultra-violet light emitting diode (UV-LED) technology to inactivate human pathogens in building water systems, 2018
- National Research Council Senior Research Fellowship, 2009-2012
- Water Environment Federation Technical Exhibition & Conference "Excellence Award", 2003
- American Society for Microbiology Student Travel Grant Award, 2002
- International Rotary Club Cultural Ambassador Grant, 1999