

# Yuxin (Cindy) Wang

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## EDUCATION

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**Ph.D. Carnegie Mellon University, Pittsburgh, PA (2014)**

Department of Civil and Environmental Engineering

Dissertation: "*Surface Water Quality Assessment and Source Water Characterization for Drinking Water Protection.*" Advisor: Dr. Jeanne M. VanBriesen

**M.S. Carnegie Mellon University, Pittsburgh, PA (2011)**

Department of Civil and Environmental Engineering

Research focus: *Microorganism Remediation of Polychlorinated Biphenyl Contamination in River Sediments.* Advisor: Dr. Jeanne M. VanBriesen

**B.S. Sun Yat-Sen University, Guangzhou, China (2010)**

School of Environmental Science and Engineering

Minor International Economy and Trade

## HONORS AND AWARDS

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1. National Science Foundation (NSF) sponsored Advancing careers in academics with diversity education and mentorship in engineering (ACADEME) fellowship (2018)
2. NSF/American Society for Engineering Education (ASEE) Small Business Postdoctoral Research Diversity Fellowship (2015)
3. Second place poster presentation at New England Water Works Association, Spring Conference and Exhibition (2015)
4. First place presentation at the Ohio River Basin Consortium for Research and Education Conference (2014)
5. Anchor QEA Scholarship, Anchor QEA Inc. (2014)
6. Steinbrenner Institute Graduate Fellowship, Steinbrenner Institute, Carnegie Mellon University (2013)
7. Fenves Travel Conference Scholarship, Civil and Environmental Engineering, Carnegie Mellon University (2013-2014)
8. Dean's Fellowship, Carnegie Institute of Technology, Carnegie Mellon University (2012)
9. Departmental Scholarship, Civil and Environmental Engineering, Carnegie Mellon University (2011)
10. Second Prize Annual Scholarship, (Ranking:18/113), Sun Yat-sen University (2007-2009)

## ACADEMIC POSITIONS HELD

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**Postdoctoral Associate**, School of Civil and Environmental Engineering, Cornell University, Ithaca, NY (2016/06 – present)

- Project title: Phase I. Identifying strategies that will provide greater confidence in estimating the degradation rates of organic chemicals in water, soil, and sediment
- Project title: Phase II. A multivariate approach to identify key parameters influencing the degradation rates of organic chemicals in water, water-sediment, and activated sludge systems
- Supervisor: Dr. Damian Helbling; Collaborator: Dr. Kathrin Fenner
- **Phase I funding was secured by Dr. Damian Helbling; Phase II funding was secured by joint proposal co-written by Dr. Damian Helbling and Dr. Yuxin Wang**

**Visiting instructor**, Department of Environmental Resources and Engineering, State University of New York College of Environmental Science and Forestry (SUNY ESF), Syracuse, NY (Spring, 2016)

- Course title: ERE 405 Sustainable Engineering

**Graduate Research Fellow**, Department of Civil and Environmental Engineering and the Center for Water Quality in Urban Environmental System (Water QUEST), Carnegie Mellon University, Pittsburgh, PA (2010/08 – 2014/08)

- Project title: Water and energy nexus, assessing the risk of chemicals in drinking water sources associated with hydraulic fracking
- Supervisor: Dr. Jeanne VanBriesen; Collaborator: Dr. Mitchell Small

**Graduate Research Assistant**, Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA (2010/08 – 2011/08)

- Project title: Comprehensive assessment of bacterial communities and analysis of PCB congeners in PCB-contaminated sediment with depth
- Supervisor: Dr. Jeanne VanBriesen and Dr. Yan Xu

## PROFESSIONAL EXPERIENCE

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**Expert Witness**, Eckert Seamans Cherin & Mellott, LLC (2015/10 – 2016/07)

- Retained as expert witness in drinking water quality and wastewater discharge permit litigation, Boston, MA

**Wastewater Engineer and Postdoctoral Fellow**, National Science Foundation (NSF) Small Business Innovation Research Program and American Society for Engineering Education (ASEE) Postdoctoral Fellow, Cambrian Innovation Inc., Boston, MA (2015/04 – 2015/10)

- Designed and modeled a membrane bioreactor for wastewater denitrification and effective cod removal at recirculating aquaculture facilities
- Experimentally characterized the biomass generated from anaerobic wastewater treatment, and evaluated net biomass yield and methane generation potential using respirometry
- **90% of salary was self-secured by a research proposal to NSF and ASEE**

## TEACHING EXPERIENCE

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**Advanced Biological Wastewater treatment – Teaching Assistant**, graduate level, Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA (3 semesters from 2012 to 2014)

- Taught weekly recitations to complement lecture. Conducted problem review sessions and held office hours to assist students; Created grading criteria and completed all grading for class of 25-30, including problem sets, take home and in-class final exams
- I developed strong understanding of specific unit operations and microbial communities in wastewater treatment, as well as kinetic modeling and process technology development

**The Environmental Today: The Three E's of Water – Teaching Assistant**, undergraduate level, Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA (Spring, 2013)

- Led field service projects and provided technical guidance for 12 students to work on urban stream cleanup and restoration

## PEER-REVIEWED PUBLICATIONS

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1. Y. Wang, A. Lyn, D. Latino, K. Fenner, D. Helbling, (2018) "Evaluating the environmental parameters that determine aerobic biodegradation half-lives of pesticides in soil with a multivariable approach." *Chemosphere*, 209: 430-438
2. Y. Wang, M. Small, J. M. VanBriesen, (2016) "Assessing the risk associated with increasing bromide in drinking water sources in the Monongahela River, Pennsylvania." *ASCE Journal of Environmental Engineering*, 143(3), 04016089
3. Y. Wang, J. Wilson, J. M. VanBriesen, (2015) "The effect of sampling strategies on assessment of water quality criteria attainment." *Journal of Environmental Management*, 154:33-39
4. J. Wilson, Y. Wang, J. M. VanBriesen, (2013) "Sources of high total dissolved solids to drinking water supply in Southwestern Pennsylvania." *Journal of Environmental Engineering*, 140 Special Issue on Shale Gas Environmental Impacts, B4014003
5. Y. Li, G. Flores, J. Xu, W. Yue, Y. Wang, T. Luan, Q. Gu, (2013) "Residual air saturation changes during consecutive drainage-imbibition cycles in an air-water fine sandy medium." *Journal of Hydrology*, 503(30): 77-88

## OTHER PUBLICATIONS

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1. Y. Wang, (2015) "Efficient COD and nitrogen removal for recirculating aquaculture facilities with a combined ion-exchange membrane bioreactor." National Science Foundation Small Business Innovation Research (NSF SBIR) Phase IIB Final Report, Contract number 1127435
2. J. M. VanBriesen, J. Wilson, Y. Wang, (2014) "Management of produced water in Pennsylvania, 2010-2012." Proceedings of the ASCE Shale Energy Engineering Conference, Water Management in Shale Oil & Gas Development, Pittsburgh, Pennsylvania

## **INVITED LECTURES**

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1. Y. Wang, "Assessing the risk associated with increasing bromide in drinking water source in in the Monongahela River, Pennsylvania," School of Civil and Environmental Engineering, Cornell University, Ithaca, NY (September, 2016)
2. Y. Wang, "Trihalomethanes Risk in drinking water associated with elevated bromide in source water" and "EcoVolt, the first and only industrial scale bioelectrically enhanced wastewater treatment system for sustainable water management," Summer Graduate Student Seminar, Department of Civil and Environmental Engineering, Northeastern University, Boston, MA (August, 2015)
3. Y. Wang, "Oil and gas extraction activities and their impact on drinking water quality," Tepper School of Business, Carnegie Mellon University, Pittsburgh, PA (April, 2014)

## **PROFESSIONAL PRESENTATIONS (\*DENOTES PRESENTER)**

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1. Y. Wang\*, K. Fenner, D. Helbling, "A multivariate approach to identify key environmental drivers of aerobic biodegradation of pesticides in soil," Departmental seminar, School of Civil and Environmental Engineering, Cornell University, Ithaca, NY, 2016
2. Y. Wang, K. Fenner, D. Helbling\*, "Evidence-based evaluation of environmental factors that drive aerobic degradation rates of pesticides in soil," 19<sup>th</sup> Annual Workshop of the Long-range Research Initiative (LRI) program of the European Chemical Industry Council (Cefic), Brussel, Belgium, 2017
3. J. M. VanBriesen\*, A. Cadwallader, J. Wilson, Y. Wang, K. Good, C. Kolb, "Source water bromide concentration changes and altered risk in finished drinking water in Pennsylvania, PA," AEESP Research and Education Conference, Ann Arbor, MI, 2017
4. J. M. VanBriesen\*, J. Wilson, Y. Wang, K. Good, "Anthropogenic surface water bromide changes, finished water health risks, and regulatory control of sources," ACE17 Annual Conference and Exposition, Philadelphia, PA, 2017
5. J. M. VanBriesen\*, J. Wilson, Y. Wang, K. Good, "Downstream drinking water impacts of fossil fuel extraction and utilization choices," Pennsylvania American Water Works Association 69<sup>th</sup> Annual Conference, Hershey, PA, 2017
6. J. M. VanBriesen\*, Y. Wang, "Assessing the risk associated with increasing bromide in drinking water source in in the Monongahela River, Pennsylvania," 252<sup>th</sup> ACS National Meeting, Philadelphia, PA, 2016
7. J. M. VanBriesen\*, J. Wilson, Y. Wang, K. Good, "Downstream Drinking Water Impacts of Fossil Fuel Extraction and Utilization Choices," Ohio River Basin Consortium for Research and Education Conference, Youngstown, OH, 2016
8. J. M. VanBriesen\*, J. Wilson, Y. Wang, K. Good, "Effects of fossil fuel extraction and utilization wastewaters on drinking water treatment processes," AEESP 2015 conference, Yale University, CT, 2015

9. Y. Wang\*, J. M. VanBriesen, "Changing risk of brominated trihalomethanes in drinking water from elevated bromide in source water," New England Water Environment Association Annual Conference, Boston, MA, 2015
10. Y. Wang\*, M. Small, J. M. VanBriesen, "Changing risk of brominated trihalomethanes in drinking water from elevated bromide in source water," Ohio River Basin Consortium for Research and Education Conference, Moon Township, PA. First place student presentation, 2014
11. Y. Wang, J. M. VanBriesen\*, J. Wilson, Y. Diao, K. Good, "Role of fossil fuel energy extraction and utilization activities on bromide discharge and their effect on formation of disinfection by-products in downstream drinking water plants," 248<sup>th</sup> ACS National Meeting, San Francisco, CA, 2014
12. J. Wilson, Y. Wang, J. M. VanBriesen\*, "Produced water management options and potential environmental effects," 248<sup>th</sup> ACS National Meeting, San Francisco, CA, 2014
13. Y. Wang\*, J. Wilson, J. M. VanBriesen, "The effect of sampling strategies on assessment of water quality standards attainment in large rivers," ASCE World Environmental and Water Resources Congress, Cincinnati, OH, 2013
14. J. M. VanBriesen\*, J. Wilson, Y. Wang, "Oil and gas produced water management in Pennsylvania during the rapid expansion of Marcellus shale gas drilling: 2008-2012," World Environmental and Water Resources Congress, Cincinnati, OH, 2013
15. J. Wilson, J. M. VanBriesen\*, Y. Wang, "Source water challenges from energy extraction activities in Pennsylvania," 246<sup>th</sup> ACS National Meeting, Indianapolis, IN, 2013
16. J. M. VanBriesen\*, J. Wilson, Y. Wang, "Challenges in measuring and monitoring for effects of shale gas produced water on drinking water treatment plants," PITTCON Conference and Expo, Philadelphia, PA, 2013

#### **POSTERS PRESENTATIONS (\*DENOTES PRESENTER)**

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1. Y. Wang, K. Fenner, D. Helbling, presented by S. Marchall\*, "Identifying strategies that will provide greater confidence in estimating the degradation rates of organic chemicals in water, soil and sediment," 18<sup>th</sup> Annual European Chemical Industry Council (Cefic) – Long-Range Research Initiative (LRI) workshop, Brussels, Belgium, 2016
2. Y. Wang\*, J. M. VanBriesen, "Changing risk of brominated trihalomethanes in drinking water from elevated bromide in source water," 2015 AWWA Spring Joint Regional Conference & Exhibition, Worcester, MA. Second place poster presentation, 2015
3. Y. Wang\*, J. M. VanBriesen, "Assessing the risk associated with increasing bromide in drinking water sources," 66<sup>th</sup> Pennsylvania AWWA Conference and Expo, Bethlehem, PA, 2014
4. Y. Wang\*, J. M. VanBriesen, J. Wilson, "The effect of sampling strategies on assessment of water quality criteria attainment in large rivers," ASCE Shale Energy Engineering Conference, Water Management in Shale Oil & Gas Development, Pittsburgh, PA, 2014

5. Y. Wang\*, J. M. VanBriesen, "Changing risk of brominated trihalomethanes in drinking water from elevated bromide in source water," Annual Steinbrenner Institute Environmental Expo, Pittsburgh, PA, 2014
6. Y. Wang\*, J. M. VanBriesen, "Changing risk of brominated trihalomethanes in drinking water from elevated bromide in source water," 61<sup>th</sup> ASCE Annual Sustainability Conference, Pittsburgh, PA, 2014
7. Y. Wang\*, J. M. Wilson, J. M. VanBriesen, "The effect of sampling strategies on assessment of water quality criteria attainment in large rivers," Annual Steinbrenner Institute Environmental Expo, Pittsburgh, PA, 2013

#### **TECHNICAL REVIEW ACTIVITY**

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- Water Research
- Journal of Environmental Health
- Journal of Environmental Engineering
- International Water Association, Water Environmental Federation, Wastewater Treatment Modelling Seminar
- Shale Energy Engineering Conference: Technical Challenges, Environmental Issues and Public Policy

#### **PROFESSIONAL ACTIVITIES AND OUTREACH**

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- International Water Association, Water Environmental Federation, Young Water Professional for Wastewater Treatment Modeling Paper Reviewing Team, 2016
- New England Water Environment Association Scholarship Committee, 2015, 2016
- Pittsburgh SciTech Middle School Science Fair Judge, 2014
- Middle School and High School day, 2013, 2014
- SWE Mentoring Program, 2010-2014
- Host of professional development workshops at SWE Region G Conference, 2013

#### **PROFESSIONAL MEMBERSHIPS**

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- American Water Works Association (AWWA)
- American Society of Civil Engineers (ASCE)
- Society of Women Engineers (SWE)