

XIAOQIN WU

Department of Ecology, Earth and Environmental Sciences Area
Lawrence Berkeley National Lab
70A-4473, 1 Cyclotron Rd., Berkeley, CA 94720, USA
Office: (510) 486-7515 Email: xiaoqinwu@lbl.gov
[Web Page](#) [Google Scholar](#) [Research ID](#)

EXPERTISE AND INTERESTS

Environmental Microbiology and Ecology

- Microbial regulation of biogeochemical cycles (e.g., carbon and nitrogen cycles) in the terrestrial subsurface;
- Geochemical constraints (e.g., natural organic carbon) on microbial community structure, function, and metabolic potential in the terrestrial subsurface;
- Exploring ‘microbial dark matter’: cultivation and isolation of ecologically important/field-relevant/novel/rarely cultured bacterial strains from sediment and groundwater.

Environmental Chemistry and Ecotoxicity

- Environmental occurrence, fate, bioaccumulation, transformation, and ecotoxicity assessment of anthropogenic contaminants (e.g., EDCs, PPCPs, hazardous compounds in AFFF) in freshwater and soil-plant system.

EDUCATION

Ph.D.	Environmental Geography, Peking University	2011
M.S.	Chemical Biology, Sun Yat-sen University	2007
B.S.	Chemistry, Sun Yat-sen University	2005

PROFESSIONAL EXPERIENCE

Lawrence Berkeley National Laboratory

- Project scientist, Dept. of Ecology, EESA
- Postdoctoral fellow, Dept. of Ecology, EESA

Berkeley, CA

2016–present

2014–2016

University of California, Riverside

- Postdoctoral scholar, Dept. of Environmental Sciences

Riverside, CA

2011–2014

GRANTS

2020-2021	DoD SERDP. “Comparative assessment of toxicity and bioaccumulation of fluorine-free formulations in terrestrial plants and model soil invertebrates”. PI. \$200k.
2019-2020	DOE ENIGMA SFA-Discovery. “Applying stable isotopes for source fingerprinting of dissolved organic nitrogen in groundwater”. Lead investigator (co-investigator: Romy Chakraborty, Terry C. Hazen). \$136k.

User proposals:

- 2018-2021 MagLab user proposal, FT-ICR MS analysis time. “Mapping utilization of natural organic matter to activity of indigenous key functional microbes in Oak Ridge FRC subsurface sediments”.
- 2016.4 EMSL user proposal, FT-ICR MS analysis time. “Microbial interactions with natural organic matter from Oak Ridge FRC sites”.

PUBLICATIONS (h-index: 16)

Peer reviewed:

- (1) **Xiaoqin Wu**, Liyou Wu, Yina Liu, Ping Zhang, Qinghao Li, Jizhong Zhou, Nancy J. Hess, Terry C. Hazen, Wanli Yang, Romy Chakraborty. Microbial interactions with dissolved organic matter drive carbon dynamics and community succession. *Front Microbiol.* 2018, 9, 1234.
- (2) **Xiaoqin Wu**, Qiuguo Fu, Jay Gan. Metabolism of pharmaceutical and personal care products by carrot cell cultures. *Environ. Pollut.* 2016, 211, 141-147.
- (3) Qiuguo Fu, **Xiaoqin Wu**, Qingfu Ye, Fredrick Ernst, Jay Gan. Biosolids inhibit bioavailability and plant uptake of triclosan and triclocarban. *Water Res.* 2016, 102, 117-124.
- (4) Lianjun Bao, **Xiaoqin Wu**, Fang Jia, Eddy Y. Zeng, Jay Gan. Isotopic exchange on solid-phase micro extraction fiber in sediment under stagnant conditions: Implications for field application of performance reference compound calibration. *Environ. Toxicol. Chem.* 2016, 35, 1978-1985.
- (5) **Xiaoqin Wu**, Laurel K. Dodgen, Jeremy L. Conkle, Jay Gan. Plant uptake of pharmaceutical and personal care products from recycled water and biosolids: A review. *Sci. Total Environ.* 2015, 536, 655-666.
- (6) Jianqiang Sun, **Xiaoqin Wu**, Jay Gan. Uptake and metabolism of phthalate esters by edible plants. *Environ. Sci. Technol.* 2015, 49, 8471-8478.
- (7) Laurel K. Dodgen, Aiko Ueda, **Xiaoqin Wu**, David R. Parker, Jay Gan. Effect of transpiration on plant accumulation and translocation of PPCP/EDCs. *Environ. Pollut.* 2015, 198, 144-153.
- (8) Yong Yu, Yin Liu, **Xiaoqin Wu**, Zhihuan Weng, Yang Hou, Laosheng Wu. Enhanced visible light photocatalytic degradation of Metoprolol by Ag-Bi₂WO₆-Graphene composite. *Separation and Purification Technology* 2015, 142, 1-7.
- (9) **Xiaoqin Wu**, Jeremy L. Conkle, Frederick Ernst, Jay Gan. Treated wastewater irrigation: Uptake of pharmaceutical and personal care products by common vegetables under field conditions. *Environ. Sci. Technol.* 2014, 48, 11286-11293.
- (10) Laurel K. Dodgen, Juying Li, **Xiaoqin Wu**, Zhijiang Lu, Jay Gan. Transformation and removal pathways of four common PPCP/EDCs in soil. *Environ. Pollut.* 2014, 193, 29-36.
- (11) Les Greenberg, Michael K. Rust, Jaben Richards, **Xiaoqin Wu**, John Kabashima, Cheryl Wilen, Jay Gan, and Dong-Hwan Choe. Practical pest management strategies to reduce pesticide runoff for argentine ant (hymenoptera: formicidae) control. *Journal of Economic Entomology* 2014, 107(6), 2147-2153.
- (12) **Xiaoqin Wu**, Jieqiong Jiang, Jianying Hu. Determination and occurrence of retinoids in a eutrophic lake (Taihu Lake, China): cyanobacteria blooms produce teratogenic retinal. *Environ. Sci. Technol.* 2013, 47, 807-814.
- (13) **Xiaoqin Wu**, Frederick Ernst, Jeremy L. Conkle, Jay Gan. Comparative uptake and translocation of pharmaceutical and personal care products (PPCPs) by common vegetables. *Environ. Int.* 2013, 60, 15-22.
- (14) **Xiaoqin Wu**, Jieqiong Jiang, Yi Wan, John P. Giesy, Jianying Hu. Cyanobacteria blooms produce teratogenic retinoic acids. *Proc. Natl. Acad. Sci. U. S. A.* 2012, 109, 9477-9482.

- (15) **Xiaoqin Wu**, Jeremy Landon Conkle, Jay Gan. Multi-residue determination of pharmaceutical and personal care products in vegetables. *J. Chromatogr. A* 2012, 1254, 78-86.
- (16) Ai Jia, Jianying Hu, **Xiaoqin Wu**, Hui Peng, Shimin Wu, Zhaomin Dong. Occurrence and source apportionment of sulfonamides and their metabolites in Liaodong Bay and the adjacent Liao River basin, north China. *Environ. Toxicol. Chem.* 2011, 30, 1252-1260.
- (17) **Xiaoqin Wu**, Jianying Hu, Ai Jia, Hui Peng, Shimin Wu, Zhaomin Dong. Determination and occurrence of retinoic acids and their 4-oxo metabolites in Liaodong Bay, China, and its adjacent rivers. *Environ. Toxicol. Chem.* 2010, 29, 2491-2497.
- (18) Wei Yi, **Xiaoqin Wu**, Rihui Cao, Huacan Song, Lin Ma. Biological evaluations of novel vitamin C esters as mushroom tyrosinase inhibitors and antioxidants. *Food Chem.* 2009, 117, 381-386.
- (19) Huajun Zhen, **Xiaoqin Wu**, Jianying Hu, Yang Xiao, Min Yang, Junji Hirotsuji, Jun-Ichi Nishikawa, Tsuyoshi Nakanishi, Michihiko Ike. Identification of retinoic acid receptor agonists in sewage treatment plants. *Environ. Sci. Technol.* 2009, 43, 6611-6616.
- (20) Zhaobin Zhang, Jianying Hu, Huajun Zhen, **Xiaoqin Wu**, Chong Huang. Reproductive inhibition and transgenerational toxicity of triphenyltin on medaka (*Oryzias latipes*) at environmentally relevant levels. *Environ. Sci. Technol.* 2008, 42, 8133-8139.

Non-peer reviewed:

- (1) J-W. Moon, C.J. Paradis, D.C. Joyner, F. von Netzer, E.L. Majumder, E. Dixon, M. Podar, X. Ge, P.J. Walian, H.J. Smith, **X. Wu**, G.M. Zane, K.S. Walker, M.P. Thorgersen, F.L. Poole II, L.M. Lui, B.G. Adams, K.B. De León, S.S. Brewer, D.E. Williams, K.A. Lowe, M. Rodriguez, Jr., T.L. Mehlhorn, S.M. Pffiffner, R. Chakraborty, A.P. Arkin, J.D. Wall, M.W. Fields, M.W.W. Adams, D.A. Stahl, D.A. Elias, T. C. Hazen. Integrated characterization of subsurface media from locations up- and down-gradient of a uranium-contaminated aquifer. *bioRxiv* 2019, doi: <https://doi.org/10.1101/712562>.
- (2) **Xiaoqin Wu**, Sarah Spencer, Jana Voriskova, Eric J. Alm, Romy Chakraborty. Capturing the Diversity of Subsurface Microbiota – Choice of Carbon Source for Microcosm Enrichment and Isolation of Groundwater Bacteria. *bioRxiv* 2019, doi: <https://doi.org/10.1101/517854>.
- (3) **Xiaoqin Wu**, Adam M Deutschbauer, Alexey E Kazakov, Kelly M Wetmore, Bryson A Cwick, Robert M Walker, Pavel S Novichkov, Adam P Arkin, Romy Chakraborty. Draft genome sequences of two *Janthinobacterium lividum* strains, isolated from pristine groundwater collected from the Oak Ridge Field Research Center. *Genome Announcements* 2017, 5, e00582-17.

HONORS AND AWARDS

- State Natural Science Award (Second Class Award), State Council of the People's Republic of China, 2017
- Young Research Scientist Award, Urban Environmental Pollution Conference (Asian edition), 2013
- Excellent Doctoral Dissertation, Peking University, 2011
- Excellent Graduate, Peking University, 2011
- Dow Sustainability Innovation Student Challenge Prize, Peking University, 2010
- Excellent Study Scholarship, Peking University, 2009, 2010
- May 4th Scholarship, Peking University, 2008
- Guangdong Guanghua Scholarship, Sun Yat-sen University, 2007
- Excellent Graduate, Sun Yat-sen University, 2005
- Excellent Student Scholarship, Sun Yat-sen University, 2002, 2003, 2004

PRESENTATIONS

• Invited Talks

- (1) Sun Yat-sen University (Nov 2017), Guangzhou, China. “Microbial interactions with natural organic matter (NOM) in subsurface environment”.
- (2) East China University of Science and Technology (Nov 2017), Shanghai, China. “Microbial interactions with natural organic matter (NOM) in subsurface environment”.
- (3) Shenzhen University (Dec 2015), Shenzhen, China. “Treated wastewater irrigation: Uptake of emerging contaminants by crops”.
- (4) Guangzhou Institute of Geochemistry, Chinese Academy of Science (Nov 2013), Guangzhou, China. “Uptake of pharmaceutical and personal care products (PPCPs) by vegetables irrigated with urban treated wastewater”.
- (5) University of California, Riverside (Jan 2012), Riverside, California. “The retinoids in the aquatic environment”.

• Oral Presentations at Symposiums/Conferences/Workshops

- (1) The International Symposium on Persistent Toxic Substances (Nov 2015), Riverside, California. “Treated wastewater irrigation: Uptake of emerging contaminants by crops”.
- (2) USDA National Institute of Food and Agriculture (NIFA) Project Director's Meeting (Oct, 2014), Washington D.C. “Treated wastewater irrigation: Uptake of emerging contaminants by crops”.
- (3) Urban Environmental Pollution Conference, Asian Edition (Nov 2013), Beijing, China. “Uptake of pharmaceutical and personal care products (PPCPs) by vegetables irrigated with urban treated wastewater”.
- (4) ACS National Meeting (Sep 2013), Indianapolis, Indiana. “Accumulation of pharmaceutical and personal care products (PPCPs) in vegetables under field conditions”.
- (5) SETAC North America Annual Meeting (Nov 2012), Long Beach, California. “Plant uptake, translocation and bioaccumulation of PPCPs in vegetables”.
- (6) The 4th International Symposium on Pesticides and Environmental Safety, the 5th Pan Pacific Conference on Pesticide Science and the 8th International Workshop on Crop Protection Chemistry and Regulatory Harmonization (Sep 2012), Beijing, China. “Pyrethroids in California surface water: occurrence, effects and causes”.
- (7) The 2nd International Water Association (IWA) Asia Pacific Regional Young Water Professionals Conference (2009), Beijing, China. “Determination and occurrence of retinoic acids and their 4-oxo metabolites in rivers from Liaodong Bay”.

• Posters

- (1) AGU Fall Meeting (Dec 2019), San Francisco, California. “Insights into the depth-resolved geochemical constraints on microbial community structure and metabolic potential for carbon cycling in shallow subsurface sediment”.
- (2) ASM Microbe (June 2019), San Francisco, California. “Identification and characterization of key subsurface microbes catalyzing bedrock nitrogen cycling”.
- (3) ESA Annual Meeting (Aug 2018), New Orleans, Louisiana. “Carbon-driven responses of bacterial community composition in enrichments from groundwater”.
- (4) AGU Fall Meeting (Dec 2016), San Francisco, California. “Microbial interactions with natural organic matter extracted from the Oak Ridge FRC”.
- (5) ASM Microbe (Jun 2016), Boston, Massachusetts. “Microbial Interactions with Natural Organic Matter Extracted from The Oak Ridge FRC”.

- (6) AGU Fall Meeting (Dec 2015), San Francisco, California. “Microbial interactions with natural organic matter extracted from the Oak Ridge FRC”.
- (7) The International Symposium on Persistent Toxic Substances (Nov 2015), Riverside, California. “Metabolism of pharmaceutical and personal care products by carrot cell cultures”.
- (8) ASM Microbe (May 2015), New Orleans, Louisiana. “Microbial interactions with native natural organic matter in groundwater from the Oak Ridge field research center”.
- (9) ACS National Meeting (Sep 2013), Indianapolis, Indiana. “Comparative uptake and translocation of pharmaceutical and personal care products (PPCPs) by common vegetables”.
- (10) SoCal SETAC Annual Meeting (Apr 2013), San Pedro, California. “Coupling stable isotope labeling and polymer fibers to sense bioavailability of DDTs in sediments”.
- (11) SETAC North America Annual Meeting (Nov 2012), Long Beach, California. “Multi-residue determination of pharmaceutical and personal care products (PPCPs) in vegetables”.
- (12) Land Grant and Sea Grant National Water Conference (May 2012), Portland, Oregon. “Understanding fate of PPCPs in soil-plant systems irrigated with treated wastewater”.

SYNERGISTIC ACTIVITIES

- **Chair/Presider at Symposia/Conferences**

- (1) ESA Annual Meeting (Aug 2018), New Orleans, Louisiana. COS 107 Urban Ecosystems II.
- (2) The International Symposium on Persistent Toxic Substances (Nov 2015), Riverside, California. Session 2: Toxicology.

- **Journal Reviewer**

Chemosphere, Environment International, Environmental Pollution, Environmental Monitoring and Assessment, Environmental Science & Technology, Environmental Toxicology and Chemistry, Frontiers Microbiology, Harmful Algae, Journal of Agricultural and Food Chemistry, Journal of Environmental Quality, Journal of Soils and Sediments, PLOS one, Science of the Total Environment

- **Professional Membership**

Member of American Chemical Society
 Member of American Geophysical Union
 Member of American Society for Microbiology
 Member of Ecological Society of America
 Member of Society of Environmental Toxicology and Chemistry

SPECIALIZED TRAINING

Python Bootcamp <i>by The Center for Computational Biology, UC Berkeley</i>	2019.6
Programming for Everybody (Getting Started with Python) <i>by University of Michigan on Coursera (verify at coursera.org/verify/Q4397WS7QYVT)</i>	2018.8
Microbial Community Analysis (amplicon community profiling) Workshop <i>by UC Berkeley QB3 Genomics Sequencing Facility and UC Davis Bioinformatics Core</i>	2018.5
R Programming <i>by Johns Hopkins University on Coursera (verify at coursera.org/verify/Q4397WS7QYVT)</i>	2016.4

MENTORING EXPERIENCE

- **Student Intern Mentee, Lawrence Berkeley National Laboratory**
 - Jun–Aug, 2019 Xingli Yu, undergraduate, College of Alameda, TTE REU program
 - Jun–Aug, 2018 Erica Dasi, Ph.D. candidate, University of South Florida, GEM program
 - Jun–Aug, 2015 Shany Ben Artsy, undergraduate, Pierce College, TTE REU program