

ZHENYU TIAN

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EDUCATION

Ph.D.	University of North Carolina at Chapel Hill Gillings School of Global Public Health Environmental Science	2017
M.S.	Chinese Academy of Sciences Research Center for Eco-Environmental Sciences Environmental Science	2014
B.S.	Jilin University Environmental Science	2011

RESEARCH INTERESTS

Environmental chemistry; Emerging contaminants; Non-target analysis; Environmental exposure; Metabolomics; Environmental remediation; Transformation products, Mass spectrometry.

PRESENTATION AND POSTERS

1. **Tian, Z.**, Vila J., Yu M., Bodnar, W., & Aitken, M. D. Tracing the biotransformation of polycyclic aromatic compounds in contaminated soil by stable isotope-assisted metabolomics. 255th ACS National Meeting, Mar. 2018, New Orleans, LA. (**Oral presentation**)
2. **Tian, Z.** & Aitken, M. D. Non-target analysis of bioremediated soil. Nov. 2017. US EPA at Research Triangle Park. (**Invited talk**)
3. **Tian, Z.** & Aitken, M. D. Non-target analysis of bioremediated soil. Sept. 2017. Department of Geosciences, Princeton University (**Invited talk**)
4. **Tian, Z.**, Gold, A., Zhang, Z., Nakamura, J., Vila, J., Singleton, D., Collins, L., & Aitken, M.D. Non-targeted analysis reveals a novel bacterial metabolite of pyrene implicated in genotoxicity of bioremediated soil. 253rd ACS National Meeting, Apr. 2017, San Francisco, CA. (**Oral presentation**)
5. **Tian, Z.**, Adrion, A., Zhang, Z., Gold, A., & Aitken, M.D. Towards identifying unknown genotoxic compounds in bioremediated soil using metabolomics-like methods and effect-directed analysis. NIEHS SRP Annual Meeting, Nov. 2015, San Juan, Puerto Rico. (**Poster**)
6. **Tian, Z.**, Liu, W. Distribution and Comparison of Mono- to Tri-Chlorinated PCDD/Fs in Stack Gas from Different Waste Incinerators. Dioxin 2013, Aug. 2013, Daegu, Korea. (**Oral Presentation**)

PUBLICATIONS

1. **Tian, Z.**, Vila J.*, Yu M., Bodnar, W., & Aitken, M. D. (2018). Tracing the biotransformation of polycyclic aromatic compounds in contaminated soil by stable isotope-assisted metabolomics. *Environmental Science & Technology Letters*, DOI: 10.1021/acs.estlett.7b00554.
2. **Tian, Z.**, Vila J. (co-first author), Wang, H., Bodnar, W., & Aitken, M. D.* (2017). Diversity and abundance of high-molecular-weight azaarenes in PAH-contaminated environmental samples. *Environmental Science & Technology*, 51 (24), 14047–14054.
3. **Tian, Z.**, Gold, A., Nakamura, J., Zhang, Z., Vila, J., Singleton, D. R., Collins, L.B. & Aitken, M. D.* (2017). Non-target analysis reveals a bacterial metabolite of pyrene implicated in the genotoxicity of contaminated soil after bioremediation. *Environmental Science & Technology*, 51 (12), 7091–7100.
4. Vila J., **Tian, Z.** (co-first author), Wang, H., Bodnar, W., & Aitken, M. D.* Isomer-selective biodegradation of high-molecular-weight azaarenes in contaminated environmental samples. (Submitted)
5. Liu, W.*, **Tian, Z.**, Li, H., Xie, H., Xiao, K., Li, C., Tang, C., & Zheng, M. (2013). Mono-to octa-chlorinated PCDD/Fs in stack gas from typical waste incinerators and their implications on emission. *Environmental science & technology*, 47(17), 9774-9780.
6. **Tian, Z.**, Li, H., Xie, H., Tang, C., Han, Y., & Liu, W.* (2014). Concentration and distribution of PCNs in ambient soil of a municipal solid waste incinerator. *Science of the Total Environment*, 491, 75-79.
7. **Tian, Z.**, Li, H., Xie, H., Tang, C., Han, Y., Wang, M., & Liu, W.* (2014). Polychlorinated dibenzo-p-dioxins and dibenzofurans and polychlorinated biphenyls in surface soil from the Tibetan Plateau. *Journal of Environmental Sciences*, 26(10), 2041-2047.
8. Han, Y., Liu, W.*, Pan, W., Wang, P., **Tian, Z.**, Zhao, Y., & Zheng, M. (2015). Formation Pathways of Mono-to Octa-Chlorinated Dibenzo-p-dioxins and Dibenzofurans in Main Organochemical Industries. *Environmental science & technology* 49(18), 10945-10950
9. Liu, W.*, Li, H., Tao, F., Li, S., **Tian, Z.**, & Xie, H. (2013). Formation and contamination of PCDD/Fs, PCBs, PeCBz, HxCBz and polychlorophenols in the production of 2, 4-D products. *Chemosphere*, 92(3), 304-308.
10. Liu, W.*, Li, H., **Tian, Z.**, Xie, H., & Hu, J. (2013). Spatial distribution of polychlorinated biphenyls in soil around a municipal solid waste incinerator. *Journal of Environmental Sciences*, 25(8), 1636-1642.
11. Liu, W.*, Li, H., **Tian, Z.**, Xie, H., & Li, C. (2013). Spatial distribution of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans in soil around a municipal solid waste incinerator. *Environmental geochemistry and health*, 35(5), 605-611.
12. Xie, H., Li, J., Zhang, C., **Tian, Z.**, Liu, X., Tang, C., & Liu, W.* (2014). Assessment of heavy metal contents in surface soil in the Lhasa–Shigatse–Nam Co area of the Tibetan Plateau, China. *Bulletin of environmental contamination and toxicology*, 93(2), 192-198.

HONORS AND AWARDS

ACS ENVR Graduate Student Award, 2018

ACS ENVR Certificate of Merit Award, 2017

Graduate School Traveling Award, UNC-Chapel Hill, 2016

Prof. Baozhen Wang Scholarship for Environmental Innovations, 2014

First Class Scholarship of Chinese Academy of Science, 2013

Second Class Scholarship of Chinese Academy of Science, 2012

Second Class Award, 2010 CSTD Competition (academic competition for undergraduates)

Second Class Scholarship of Jilin University (for the top 15%), 2007-2008, 2008-2009

RESEARCH EXPERTISE

- Instrumental analysis: GC-qMS, GC-QqQ, HRGC-HRMS, HPLC-FLD, HPLC-QqQ, HPLC-qTOF, Q-Exactive HF (Orbitrap)
- Environmental sampling and pre-treatment: soil, water, flue gas, and air particulates; bioreactor operation and maintenance
- Toxicology: cell culture, bioassay, effect-directed analysis
- Data analysis: XCMS, MZmine, enviMass, Mass Profiler Professional
- Data-oriented programming: R, C, python, MapInfo