

**Name: Ge Ying**

**Professor of Environmental Biology**

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**Education:**

- Ph.D. (major: Environmental Soil Chemistry); McGill University, Canada; 2003
- M.Sc. (major: Environmental Soil Chemistry); McGill University, Canada; 1999
- B.Sc. (major: Soil Science and Plant Nutrition); Hunan Agricultural University, China; 1996

**Research interests and expertise:**

Research activities in our group include the three aspects below. Particularly, we have investigated the detoxification mechanisms of various organisms (algae, bacteria, plants, earthworm, etc) upon exposure of metal(loid)s. We are also interested in metal(loid) speciation analyses in environmental and biological samples as it not only affects the toxicity and distribution of metal(loid)s, but also impacts the food quality and human health. Advancement in these fields also assist the development of novel technologies to remediate environment contaminated by metal(loid)s.

- Uptake, accumulation, transformation and efflux of metal(loid)s by organisms
- Chemical speciation and bioavailability of metal(loid)s in water and soils
- Development of remediation materials for metal(loid) polluted water and soils

**Current projects:**

- National Natural Science Foundation of China 31770548, Mechanisms of effects of extracellular polymeric substances (EPS) on the arsenic accumulation and metabolism in microalgae, 2018-2021
- National Key Research and Development Program of China 2017YFD0800305, Risk assessment and prevention/control system of heavy metal pollution in farmland with high geological background, 2017-2020
- National Key Research and Development Program of China 2016YFD0800306, Heavy metal source-and-sink coupling mechanism and its multi-scale modelling in soil-crop system, 2016-2020

**Current teaching:**

- Introduction to Environmental Science, ENSE3102B (a billigual course to first-year undergraduate students), spring term

### **Selected publications:**

- Wang Y, Li YQ, Lv K, Cheng JJ, Chen XL, Ge Y\*, Yu XY\* (2018) Soil microalgae modulate grain arsenic accumulation by reducing dimethylarsinic acid and enhancing nutrient uptake in rice (*Oryza sativa* L.). *Plant and Soil* 430(1-2): 99-111
- Wang Y, Zhang CH, Zheng YH, Ge Y\* (2017) Phytochelatin synthesis in *Dunaliella salina* induced by arsenite and arsenate under various phosphate regimes. *Ecotoxicology and Environmental Safety* 136: 150-160
- Wang Y, Zhang CH\*, Lin MM, Ge Y\* (2016) A symbiotic bacterium differentially influences arsenate absorption and transformation in *Dunaliella salina* under different phosphate regimes. *Journal of Hazardous Materials* 318: 443-451
- Ge Y\*, Ning ZB, Wang Y, Zheng YH, Zhang CH, Figeys D\* (2016) Quantitative proteomic analysis of *Dunaliella salina* upon acute arsenate exposure. *Chemosphere* 145: 112-118
- Wang Y, Wang S, Xu PP, Liu C, Liu MS, Wang YL, Wang CH, Zhang CH, Ge Y\* (2015) Review of arsenic speciation, toxicity and metabolism in microalgae. *Reviews in Environmental Science and Bio-technology* 14(3): 427-451