Name: Guohua Xu

Professor of Plant Mineral Nutrition

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Education:

- Ph.D., Hebrew University of Jerusalem; Plant Physiology, 2000
- M.A., Nanjing Agricultural University; Plant Nutrition and Fertilization, 1988
- B.A., Nanjing Agricultural University; Soil Science and Agro-chemistry, 1985

Research interests and expertise:

- Plant nutritional biology, focusing on molecular genetics of N, P and K nutrition in crops
- Nutrient efficient breeding of crops, focusing on coordination of high yielding and NUE in rice
- Plant resistance to salt and water stress, focusing on the function and regulation of HAK/KT/KUP and CPA (cation/proton antiporter) families
- Molecular genetics of mycorrhiza symbiosis, focusing on the function and regulation of mycorrhiza inducible transporters in crops.

Current projects:

- National Key Research and Development Project (2016YFD0100700), The genetic and molecular basis for the formation of the main crop nutrient use efficient traits, 2016-2020
- National Natural Science Foundation of China (31872165), Functional characterization of a rice sugar partitioning regulator-1 (OsSPR1) and its downstream gene OsUGP5 in maintaining the homeostasis of carbon and phosphorus nutrition, 2019-2022
- National Natural Science Foundation of China (C150701), Functional characterization of rice OsAGPase3 gene encoding ADP-Glucose pyrophosphorylase in response to nitrogen and phosphate, 2015-2018

Current teaching:

- Plant mineral nutrition (72h for undergraduate students during September - January)
- Advanced plant mineral nutrition (48h for graduate students during September - January)
- General introduction on the discipline of agricultural resources and environmental sciences (6 h in Spring)

Selected publications:

- Guohua Xu*. 2018. Sensing and transport of nutrients in plants. Seminars in Cell & Developmental Biology 74: 78-79.
- Xuan W, Beeckman T, Xu GH*. 2017. Plant nitrogen nutrition: sensing and signaling. Current Opinion in Plant Biology 39: 57-65.
- Fan XR, Tang Z, Tan YW, Zhang Y, Luo BB, Yang M, Lian XM, Shen QR, Miller AJ, Xu GH*. 2016. Overexpression of a pH-sensitive nitrate transporter in rice increases crop yields. Proceedings of the National Academy of Sciences of the United States of America. 113: 7118-7123.
- Gu M, Chen AQ, Sun SB, Xu GH*. 2016. Complex regulation of plant phosphate transporters and the gap between molecular mechanisms and practical application: What are missing? Molecular Plant 9(3): 396-416.
- Xu GH*, Fan XR, Miller AJ. 2012. Plant nitrogen assimilation and use efficiency. Annual Review of Plant Biology 63: 153-182.

Prizes, awards, honors:

- National distinguished scholar for agriculture science and technology in China