

THE EDUCATION UNIVERSITY OF HONG KONG
FACULTY OF LIBERAL ARTS AND SOCIAL SCIENCES

Research Impact/Knowledge Transfer Prize (IKTP)
for the Dean's Research Fund 2021/22

Brief Introduction of Awardee's

Research Impact/KT Publication/Output and Future Research Impact/KT Development

Awardee (Dept):	<u>Dr Li Wai Chin, Associate Professor (SES)</u>
Publication Title / Research Impact / KT project:	<u>Soil microbes and root structure alter As and Cd accumulation in rice (<i>Oryza sativa</i> L.)</u>

- A. *Briefly introduce your research impact/KT publication/output for which you have received the prize.*

Cadmium (Cd) and arsenic (As) contamination in paddy soils poses serious health risks to humans. Our results suggest that regulating the composition of the rhizosphere bacterial community could simultaneously reduce Cd and As accumulation in rice grain and increase the grain yield. Besides, the root morphological and anatomical characteristics evidently affect Cd accumulation in the shoots by inhibiting Cd translocation, especially via the apoplastic pathway. It was possible to pre-screen low Cd accumulating rice cultivars on the basis of their root morphology, anatomical characteristics and Cd translocation rate at the seedling stage.

- B. *How you used/will use your prize and perhaps its usefulness to your research impact/KT development?*

The present study is highly relevant to Asian agricultural practices and provide new insights into the physiological mechanisms of metal uptake and translocation by rice plants.

- C. *Expected research impacts/KT outcomes/outputs arising from this prize.*

The data generated will assist the preparation of a GRF proposal.