

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

Research Output/Impact/Knowledge Transfer Prize
for the Dean's Research Fund 2018-19

Brief Introduction of Awardee's
Research/KT Publication/Study/Output and Future Research/KT Development

Awardee (Dept): Dr. Pei Qing, Assistant Professor (SSC)
Publication Title/KT project: Climate Change

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

Agrarian economy in late imperial China has shown a high level of vulnerability to climate change, particularly in the long term. Furthermore, the climatic impacts are more dominant than the population pressure in causing the scarcity and food crisis in the economic system (1). Due to the economic vulnerabilities, the impact of climate change spread from economic sector to other social sectors to cause climate refugees and even violent conflicts (2-7). Based on these empirical linkages, Dr. Pei even identified the philosophy of climate-society nexus in historical Chinese culture (6).

1. **Qing Pei***, et al. Temperature and precipitation effects on agrarian economy in late imperial China. *Environmental Research Letters*, 2016(11), 064008. (SJR A*)
2. **Qing Pei***, et al. Long-term association between climate change and agriculturalists' migration in historical China. *The Holocene*. 2018, 28(2): 208-216 (SJR A*)
3. **Qing Pei***. Migration for survival under natural disasters: A reluctant and passive choice for agriculturalists in historical China. *Science China Earth Sciences*. 2017, 60(12), 2089-2096. (SJR A)
4. **Qing Pei***, et al. The Strange Flight of the Peacock: Farmers' atypical northwesterly migration from central China, 200BC-1400AD. *Annals of the American Association of Geographers*, (Forthcoming) (SJR A*).
5. **Qing Pei***, et al. Climate change, state capacity and nomad-agriculturalist conflicts in Chinese history. *Quaternary International*. 2018
<https://doi.org/10.1016/j.quaint.2018.10.022> (SJR A)
6. **Qing Pei***, Philippe Forêt. Source Note: Introduction to the Climate Records of Imperial China. *Environmental History*. 2018, 23(4): 863-871 (SJR A)
7. Jianyong Li, John Dodson, Hong Yan, David D. Zhang, Xiaojian Zhang, Qinghai Xu, Harry F. Lee, **Qing Pei**, Bo Cheng, Chunhai Li, Jian Ni, Aizhi Sun, Fengyan Lu, Yongqiang Zong. Quantifying climatic variability in monsoonal northern China over the last 2200 years and its role in driving Chinese dynastic changes. *Quaternary Science Reviews*. 2017, 159: 35-46 (SJR A*)

Note: SJR: Scientific Journal Rankings, <https://www.scimagojr.com/journalrank.php>

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

First, I deeply appreciate the support of the prize to me to further polish my research in the future. To polish my current research, I plan to use this esteemed grant in three aspects: equipment, field trip and knowledge transfer.

In terms of equipment, my research is conducted with a quantitative basis. Therefore, I will plan to buy one digital camera to record the data from historical documents and other related equipment in order to perform some more complicated calculation like wavelet analysis and Fourier transformation. By using more advanced methods in statistics and mathematics, it will be able to have some new findings. I am the one who has applied quantitative approaches into the field of historical geography and environmental humanities.

The data is fundamentally important to the quantitative analysis. So far, the records in the field of historical geography and environmental humanities in China have scattered across the nation. Meanwhile, the digitized work of these historical records just begins in China at present. It will be necessary to collect the records in person by myself through the field trip. Then, I will quantify those collected historical records into data format by using the high-performance computer. Thus, field trip will be necessary for my future research.

Last but not least, my research aims to have international impacts in academia and lay public. So far, I have two patents and hope to make more contribution to knowledge transfer.

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

First, the project will collect up-to-date and precise records at specific historical periods. These datasets could be used and referred by scholars and lay public to explore more on the socio-economic impacts of climate change.

Second, I will also submit the socio-economic data series to International Institute of Social History and Allen-Unger Global Commodity Prices Database to improve the current collection on past Chinese data. These two databases are online platforms that allow researchers to access and download the archived data for their own studies, which will enlarge the impacts of my research in academia.

Third, I aim to publish at least one paper in peer-reviewed journals as the project output. If possible, I also hope to have a book contract under the support of this project.