

# Department of Social Sciences and Policy Studies

## Dean's Research Fund Presentation

### Typhoon uprooting of urban trees: Rootability confinement and soil-design solutions



**Prof Jim Chi Yung**  
Professor

Direct typhoon attacks in Hong Kong invariably annihilated many urban trees. A large-scale survey of collapsed trees after Typhoon Manghut of 2018 was conducted using crowd-sourced images. The tree species, dimensions, failure mode, planting site and rootable soil limitations were evaluated. The findings provided an objective basis to understand tree-uprooting causes vis-a-vis cramped site and soil conditions. Expressed as external (macro-scale) soil-body volume and internal (micro-scale) soil-pore volume limitations, the double jeopardy of urban soil insularity acutely restricts root growth, root spread, tree health, and stability. A comprehensive package of novel soil-design solutions to expand and share the limited soil volume was proposed. Urban tree managers can adopt out-of-the-box thinking in overcoming critical physical soil deficiencies. Close interactions between science and practice can resolve the intractable bane of urban forestry.

### Comparative analysis on epidemics in historical China and Europe: Impacts of Climate Change, Economic Well-Being, and Population

Academic attention is increasing to examine historical epidemics from the perspective of human ecology. Studies are still inadequate, however, from a macro-scale perspective (quantitative studies in particular) focusing on long-term dynamics of epidemics. In this study, two regions are selected, China (AD1368–1901) and Europe (AD1350–1850), which further enables the comparative approaches. Using long-term and high quality datasets, “climate plus economy on epidemics” and “climate plus population on epidemics”, were empirically investigated via correlation, multivariate regression analysis, and autoregressive exogenous (ARX) analysis under the framework of human ecology. According to the results, we found economic well-being was the important factor that influenced the dynamics of epidemics alongside climate change. This study not only supplements current understanding of epidemic mechanisms, but also examines the economy–epidemic link from a pre-industrial perspective. Lessons from macro-history will provide historical references to current societies when facing to unprecedented pandemic globally.



**Dr. Pei Qing**  
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**Moderator**  
**Dr. Hu Zhiyong**

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**Time: 12:30–13:30**

**Venue: D4–LP–03 or Zoom**



Zoom



Form