



LSGI RESEARCH SEMINAR

Integration of spatialization and individualization: the future of epidemic modeling for communicable diseases

 **4 DEC 2024 (WED)**

 **3:00 - 4:00 PM**

 **CF302, POLYU**

 **ENGLISH**

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ABSTRACT

In the past several decades, epidemic modeling for communicable diseases has experienced transitions from treating the entire study area as a whole to addressing spatial variation within the area, and from targeting the entire population to incorporating characteristics of categorized subpopulations and finally going down to the individual level. These transitions have been first driven by the recognition that generalizations of space and population in conventional epidemic modelling may have hampered the effectiveness of the modeling; they then have been supported by increasingly available data that allow the depiction of detailed spatiotemporal characteristics of an epidemic, as well as those characteristics of the environment in both human and natural aspects; and finally, they have been facilitated by developments in geographic information science, data science, computer science, and computing technologies. In this presentation, I explicitly put forward the notions of spatialization and individualization in epidemic modeling, point out that integrating the two is the future of communicable disease modeling, and propose a procedural framework of epidemic modeling that implements the integration.

BIOGRAPHY

Xun Shi, Ph.D., is a full professor and the Chair of the Geography Department at Dartmouth College, USA. His primary research interest is in spatial analysis and spatial modeling, particularly their applications in health-related issues, including disease mapping, environmental health, epidemic modeling, and access to healthcare services. He has published about 100 journal papers and numerous other publications. His work is funded by NIH, NSF, CDC, USDA, and other sources. He served as the President of the International Association of Chinese Professionals in Geographic Information Science (CPGIS), Chair of the Specialty Group of Health and Medical Geography of the American Association of Geographers (AAG), and Advisor of Guangdong Provincial Center for Disease Control and Prevention (Guangdong CDC).

Moderator: Dr. Xintao LIU, LSGI

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