

# **BRI Research Fellows LECTURE SERIES**



## **Arboviruses and Their Related Infections in China: A Comprehensive Field and Laboratory Investigation Over the Last Three Decades**

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Since the 1980s, a comprehensive field and laboratory investigation has been conducted throughout China, and a total of 29 virus species belonging to seven families and thirteen genera were identified through virological, morphological, and immunological methods, as well as whole-genome sequencing and molecular genetic analyses. Most of the virus isolates belong to nine genera in the families *Flaviviridae*, *Bunyaviridae*, *Togaviridae*, and *Reoviridae*. Among them, four genera (*Orthobunyavirus*, *Bunyavirus*, *Phlebovirus*, and *Nairovirus*) belong to the family *Bunyaviridae* and three genera (*Seadonavirus*, *Orbivirus*, and *Cypovirus*) belong to the family *Reoviridae*.

Analyses of the relationships between viruses and human/animal diseases indicated that Japanese encephalitis virus, dengue virus, severe fever with thrombocytopenia syndrome virus, tick-borne encephalitis virus, Crimean-Congo hemorrhagic fever virus, West Nile virus, and Tahyna virus can cause human and animal infections and disease epidemics in China. The knowledge of the diversity and geographical distribution of arboviruses, vectors and related infections provides strong technical support for the prevention and control of arboviral diseases, the treatment of epidemics, and the early warning and prediction of diseases in China, Asia, and around the world.

Dr. Liang leads a national team dedicated to the study on arboviruses and their related infections in China, including the etiology and epidemiology of pathogens, development and evaluation of diagnostic methods and reagents, as well as providing technical training and guidance for health practitioners at the local CDC. Since the 1980s, he has hosted field and laboratory investigations on arboviruses in China over the last three decades. Numbers of new arboviruses were isolated and identified using virological and molecular biological methods. In recent years, he has also been engaged in research on emerging diseases such as SARS, Rabies, and Influenza virus.

**3:00 p.m., Tuesday, September 19, 2017**  
**Lecture Hall, Biosecurity Research Institute**  
**Pat Roberts Hall, 1900 Denison**

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