HKU-Pasteur Research Pole (HKU-PRP)

Research

- **Research Strategy**
  - The mission of to generate information on fundamental processes of **infectious diseases** that may be translated into clinical applications.
  - Focus on burden of diseases in the region, emphasis on **influenza** and other **viruses** that are threats.
    - unifying theme of host-pathogen interactions using **influenza** and **dengue** as model viruses

➢ Malik PEIRIS, Director MBBS, FRCPath, D Phil (Oxon), FHKAM (Path), FRCP, FRS

- Clinical and public health virologist
  - Emerging virus disease at the animal-human interface including influenza, coronaviruses.
  - Current research:
    - Pathogenesis, innate immune responses, transmission, ecology and epidemiology of human and animal influenza viruses.
- In 2003, he played a key role in the discovery that **a novel coronavirus** was the cause of **SARS**, its diagnosis and pathogenesis.
    - Currently he is researching the recently emerged **MERS** coronavirus.

- He coordinates an 8 year on the "Control of Pandemic and Inter-pandemic Influenza".
  - He is also an investigator in the Centers of Excellence for Influenza Research and Surveillance (CEIRS) program of NIAID, National Institutes of Health, and USA.
  - He has collaborative research activities with researchers in Europe through EU Framework research grants such as "EMPERIE" (FP7) on emerging infectious diseases and "FLUPIG" on influenza viruses in swine.
  - He is currently Director of the Centre of Influenza Research at HKU
  - He co-directs the WHO H5 Reference Laboratory at HKU

➢ Roberto BRUZZONE, Co-Director MD (Rome, Italy)

- **Suki LEE Lab** (Suki MY LEE, BSc (Hons), MPhil, PhD)

  - research focuses on virus-host interaction and host response to viral infection:
    - Investigation of **transcriptomic**
    - virus-host mechanisms
    - cell **signaling** pathways in **influenza** viral **pathogenesis**
    - Potential of novel **therapeutic targets** for treatment these viruses.

➢ **collaborated**

  - Professor Nancy Ip (Dean of Science, The Hong Kong University of Science and Technology, Hong Kong), and Professor Bob Hancock (Director of Centre for Microbial Diseases and Immunity Research, The University of British Columbia, Canada)
    - **Neuropathogenesis of influenza A** viruses and identification of novel **therapeutic** options for the treatment of influenza disease.
  - 4 grants as Principal Investigator, and is Co-Investigator to 5 other major research grants from Research Fund for the Control of Infectious Diseases and Research Grants Council-General Research Fund.

➢ **PhD Projects**

  - Role of TLR10 as an innate immune sensor for respiratory viral infections
  - Role of COX-2 and its signaling in viral pathogenesis**.**
  - Potential new therapeutic option in treatment of influenza disease

- **Chris MOK Lab** Chris KP MOK, BSc (Hons), MPhil, PhD

➢ **Projects**

  - **Pathogenesis of avian influenza** viruses in mammalian hosts
    - Highly pathogenic H5N1 influenza virus
    - The recent H7N9
    - role of the avian H9N2 subtypes on the pathogenicity in human
    - Elucidate how avian influenza viruses cause pathogenicity in mammalian hosts

➢ **Research Interests:**

  - Apoptosis, and the involved signaling pathways in avian influenza virus-infected cells
  - Molecular biology of anti-viral drugs against influenza virus
  - Viral determinants of avian influenza viruses (H5N1, H7N9, H9N2) associated with the pathogenicity in human or other mammals

➢ **MPhil Projects**

  - Investigation of the immune and virologic responses of influenza virus infected IPS-derived pneumocytes

- **Sumana SANYAL Lab** Sumana SANYAL, BSc (Hons), MSc, PhD

➢ **Projects**

- Focuses on understanding host-pathogen interactions that orchestrate an outcome between a successful virus infections versus host restriction.
  - **Dengue** and **Influenza** viruses

1. Identification and characterization of host factors involved in Dengue virus infection
2. Role of deubiquitylation events during virus infection
3. Role of interferon stimulated gene 15 (ISG15) in host restriction of virus infections

➢ **PhD Projects**

1. Host factors involved in dengue virus release
2. Role of deubiquitylating enzymes (DUB) in innate immune signaling pathways and during viral infections
3. Function of Tsg101 during influenza infection and its modulation by the interferon-I response

Teaching

- **Courses**

- HKU-PRP has established with the University of Hong Kong and Institute Pasteur, a Centre of Excellence for Teaching and Training in Biomedical Research for postgraduate students, preferentially from HKU, the International Pasteur network and Asian universities.
- Combining excellence three major international courses per year (Cell Biology, Virology and Immunology) and smaller training and technology-oriented courses organized or co-organized by HKU-PRP and HKU.
  - 22 Nov 2015
    - 8th HKU-Pasteur Immunology Course
  - 10 Jul 2015
    - 12th HKU-Pasteur Virology Course

- The International Course on Outbreak Investigation will start on 2 November : Deadline: September 4, 2015