

Medical Mycology Research Center Monthly Seminar

April 11 (Tue), 2017 16:30 ~ 17:30

Main conference room, Medical Mycology Research Center, Chiba University

**“How vaccinia virus (ab)uses the host cytoskeleton
to promote its spread”**

Professor Michael Way

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Viruses are obligate intracellular parasites that are critically dependent on their hosts to replicate and generate new progeny. To achieve this goal, viruses have evolved numerous elegant strategies to subvert and use the different cellular machineries and processes of their unwilling hosts. Moreover, they often accomplish this feat with a surprisingly limited number of proteins. Among the different systems of the cell, the cytoskeleton is often one of the first to be hijacked as it provides a convenient transport system for viruses to reach their site of replication with relative ease. At the latter stages of their replication cycle, the cytoskeleton also provides an efficient means for newly assembled viral progeny to reach the plasma membrane and leave the infected cell. Investigating exactly how viruses hijack and subvert their unwilling hosts offers a unique opportunity to obtain mechanistic insights into the regulation and function of a multitude of cellular processes. To this end, our lab uses a combination of quantitative imaging and biochemical approaches to study Vaccinia virus as a model to interrogate the regulation and function of Src and Rho GTPase signalling networks, actin and microtubule-based transport as well as cell migration. I will discuss how studying Vaccinia has provided insights into the recruitment of kinesin-1 and regulation of Arp2/3 driven actin polymerization.

Organized by Medical Mycology Research Center, Chiba University

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