

**Thursday, September 25, 10:30-11:00 a.m.**

*“Detection of enteric pathogens by the nodosome”*

Andreas Bäumlér, Ph.D.

University of California School of Medicine, Davis, [ajbaumlér@ucdavis.edu](mailto:ajbaumlér@ucdavis.edu)

NOD1 and NOD2 participate in signaling pathways that detect pathogen-induced processes, such as the presence of peptidoglycan fragments in the host cell cytosol, as danger signals. Recent work suggests that the IMD pathway in insects and NOD1 pathway in vertebrates represent evolutionary conserved signaling cascades for the detection of diaminopimelic acid-type peptidoglycan. Peptidoglycan fragments might activate NOD1 indirectly, through activation of the small Rho GTPase RAC1. Excessive activation of small Rho GTPases by virulence factors of enteric pathogens also triggers the NOD1 signaling pathway. Many enteric pathogens employ virulence factors that alter the activation state of small Rho GTPases, thereby manipulating the host cell cytoskeleton of intestinal epithelial cells to promote bacterial attachment or entry. These data suggest that the NOD1 signaling pathway in intestinal epithelial cells provides an important sentinel function for detecting “breaking and entering” by enteric pathogens.