

OR216*Blattabacterium* function, genome degradation and loss in primitive termites**Nathan Lo**

The low levels of nitrogen in wood means that wood-feeding termites must find ways of obtaining and conserving this element. *Blattabacterium cuenoti* is an intracellular bacterium found in specialised bacteriocytes of the fat body of cockroaches and the primitive termite *Mastotermes darwiniensis*. The bacteriocytes are found adjacent to urocytes (containing uric acid), and it was long thought that the function of the bacterium was to convert uric acid (an end product of nitrogen metabolism) back into usable nitrogen products for the host. The absence of genes encoding uricases in all *B. cuenoti* genomes thus far sequenced was, therefore, unexpected. One hypothesis to explain this absence is that gut bacteria are responsible for recycling uric acid, and that the breakdown product urea is transported back to the fat body where *B. cuenoti* converts it into essential amino acids for its host. I will examine the evidence for this hypothesis as well as alternative hypotheses on uric-acid degradation in cockroaches and termites. I will then compare the *B. cuenoti* genomes thus far sequenced and discuss the connection between social behaviour and the degradation and eventual disappearance of the *B. cuenoti* genome during the evolution of termites.